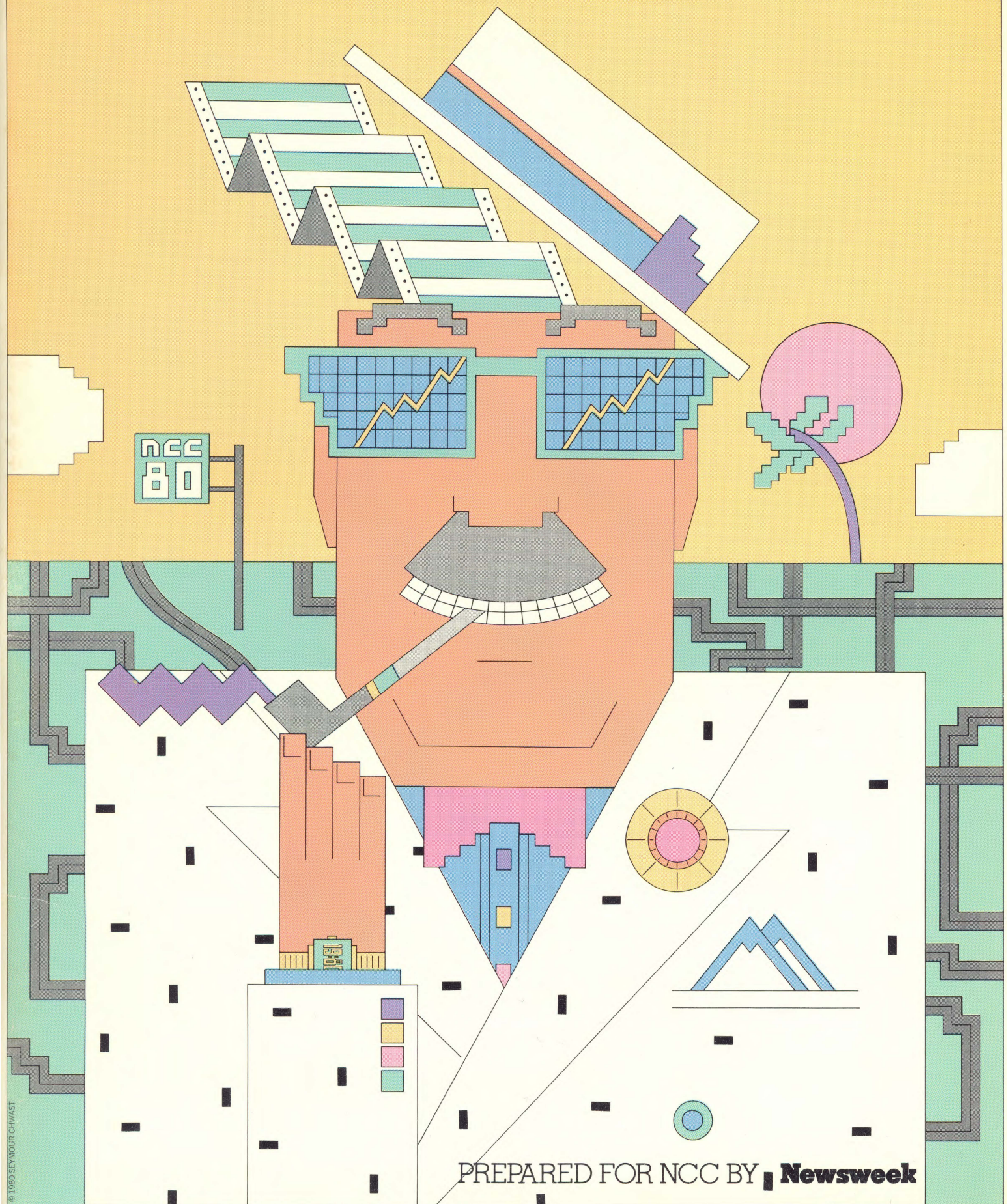


NATIONAL COMPUTER CONFERENCE

MAY 19-22 1980 ANAHEIM CONVENTION CENTER ★

OFFICIAL EXHIBIT GUIDE



PREPARED FOR NCC BY **Newsweek**

Brand Preference Study 1977

Brand Preference Study 1978

Brand Preference Study 1979

Brand Recognition Study 12th Edition 1978

Brand Recognition Study 13th Edition 1979

SILENT 700
electronic data terminals



Model 733 ASR
Data Terminal



SILENT 700
electronic data terminals



Model 743
Data Terminal



SILENT 700
electronic data terminals



Model 745
Portable
Data Terminal



SILENT 700
electronic data terminals



Model 781 RO
Printer



SILENT 700
electronic data terminals



Model 783 KSR
Data Terminal



SILENT 700
electronic data terminals



Models 785/787
Portable
Data Terminals



BRAND
PREFERENCE

THERMAL

SILENT 700
electronic data terminals



Model 763
Bubble Memory
Data Terminal



SILENT 700
electronic data terminals



Model 765
Portable
Bubble Memory
Data Terminal



OMNI 800
electronic data terminals



Model 820 KSR
Data Terminal



OMNI 800
electronic data terminals



Model 820 RO
Printer



OMNI 800
electronic data terminals



Model 825 KSR
Data Terminal



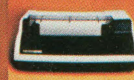
OMNI 800
electronic data terminals



Model 825 RO
Printer



OMNI 800
electronic data terminals



Model 810 RO
Printer



MEMORY

IMPACT

Best Sellers.

IMMEDIATE
DELIVERY

TI's data terminals
top the list with
industry leaders.



TI data terminals have been the industry's choice for years. Now businesses worldwide are giving TI's *Silent 700** and OMNI 800* Electronic Data Terminals great reviews for performance and low cost.

Every *Silent 700* model features TI's field-proven thermal printhead for 30 characters-per-second virtually silent printing. The Model 733 is ideal for businesses needing the performance of dual magnetic tape cassettes with off-line storage. The Model 743 Keyboard Send-Receive Data Terminal tops the list for low-priced data terminals and is ideally suited for stationary computer input/output applications. And our Model 763's built-in nonvolatile bubble memory recalls locally-stored data, cutting down on computer-use time.

Businesses on the move are choosing *Silent 700* Portable Data Terminals as compact traveling companions. The Model 745 Portable Data Terminal weighs only 13 pounds and uses a standard telephone and electrical outlet to communicate with a host computer. The lightweight Model 765 Portable Bubble Memory Data Terminal takes orders all day, and can then save on communication costs by transmitting at night when phone rates are lower.

The new 780 Series Data Terminal models feature TI's state-of-the-art dual-matrix printhead for 120 characters-per-second virtually silent thermal printing.

The OMNI 800 Family impacts businesses with a collection of standard features, like optimized bi-directional printing speeds of 75 or 150 characters-per-second, and adjustable wide carriages that take the effort out of handling multiple forms. From the reliable Model 810 RO Printer, known for quality performance, to the flexible Models 820 KSR and 820 RO, the OMNI 800 Family provides quick responses to your impact printing needs. Rounding out the family, the cost-efficient Models 825 KSR and 825 RO offer the novel feature of upgradability.

TI is dedicated to producing quality, innovative products like the *Silent 700* and OMNI 800 Electronic Data Terminal Families. And TI's hundreds of thousands of data terminals shipped worldwide are

backed by the technology and reliability that comes from over 30 years of experience in the electronics industry.

Supporting TI's data terminals is the technical expertise of our worldwide organization of factory-trained sales and service representatives, and TI-CARE†, our nationwide automated service dispatching and field service management information system. That's why TI has been appointed



the official computer and calculator company of the 1980 Olympic Winter Games.

Every member of TI's best-selling *Silent 700* and OMNI 800 Families is ready for immediate off-the-shelf delivery. And our nationwide sales representatives and Authorized Distributors can advise you about quantity discount structures for additional cost savings.

For more information, contact the TI sales office or Authorized Distributor nearest you, or write Texas Instruments Incorporated, P.O. Box 1444, M/S 7784, Houston, Texas 77001, or phone (713) 937-2016.



*Trademarks of Texas Instruments †Service Mark of Texas Instruments Copyright © 1980, Texas Instruments Incorporated

TEXAS INSTRUMENTS

We put computing within everyone's reach.



I'd like to extend a warm welcome to all of you joining us at the 1980 National Computer Conference. If this is a return visit for you, I hope you will find this year's NCC even more successful. If you have never attended an NCC before, I hope this will be just the first of many AFIPS sponsored conferences that will interest you.

The NCC is sponsored jointly by the American Federation of Information Processing Societies and four of its member societies: the Association for Computing Machinery, the Data Processing Management Association, the IEEE Computer Society, and the Society for Computer Simulation. Most professional societies with significant data processing concerns are represented at the NCC's through this joint sponsorship.

On behalf of the National Computer Conference Board of Directors, I thank each of the sponsoring societies for their invaluable contributions to the NCC. I'd also like to add a note of sincere appreciation for all the time, effort, and financial resources invested by the more than 400 companies participating in the NCC exhibit program.

There are many others who deserve special recognition for their assistance in producing this conference. Conference Chairman Herbert Safford, and the NCC Committee consistently provided focus and direction. The NCC '80 Conference Steering Committee has organized a first-rate, highly professional conference. The professional AFIPS staff supplied much necessary effort and assistance.

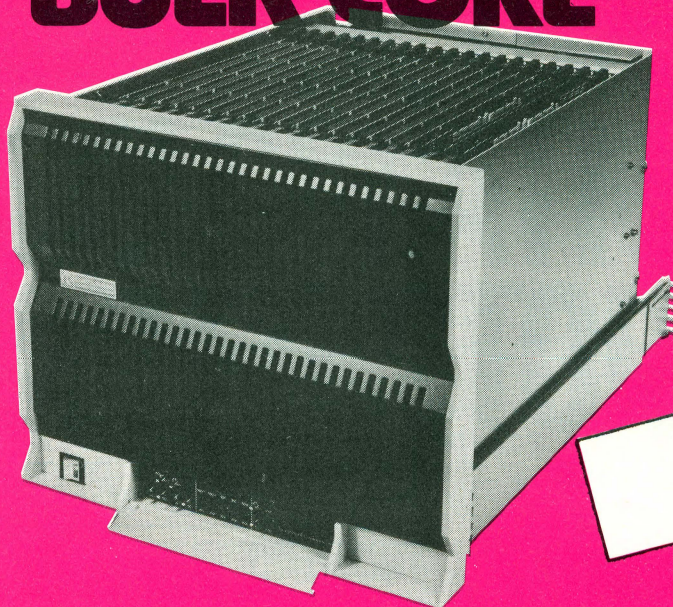
The collaboration of all these groups and individuals has resulted in a principal event in the information processing industry — one of the most comprehensive NCC's ever. We are extremely pleased with this year's NCC '80 and have every intention of continuing to present the best overall view of the computer industry at conferences of the future.

We are also planning to expand upon this year's highly successful 1980 Office Automation Conference, the only conference exclusively dealing with the total range of disciplines involved in office automation.

I hope your visit to the 1980 National Computer Conference proves enjoyable and productive and hope you will plan on attending Office Automation and National Computer Conferences in the future.

Robert Marrigan
Chairman
National Computer Conference Board of Directors

BULK CORE



Booth
2221

BULK SEMI

NOW AVAILABLE WITH THE INDUSTRY'S MOST EXTENSIVE LINE OF CONTROLLERS

Dataram's popular BULK CORE and BULK SEMI are available with interfaces that bring all the proven features of this high-capacity, high-reliability, low-cost memory system to your minicomputer.

Use BULK CORE or BULK SEMI as peripheral storage or main memory. In either 7" or 15¾" chassis. With storage capacities up to eight megabytes in one chassis. And with dual-port capability available for DEC and Data General disk emulators.

And all available with interfaces to these popular minicomputers (and there are more coming!):

DEC

LSI-11® RF-11 fixed-head disk emulator
PDP®-11 RF-11 fixed-head disk emulator
PDP-11/70 main memory
PDP-11 RJS03/04 fixed-head disk emulator
PDP-15 RF-15 fixed-head disk emulator

Data General

Novadisc® (4019 compatible) emulator
AOS (6063/6065 compatible) fixed-head disk emulator

Find out today how BULK CORE and BULK SEMI can help you get more out of your minicomputer. Contact Dataram at 609-799-0071.

Interdata

Moving-head disk emulator

Modular Computer Systems
MEMORY +

ROLM

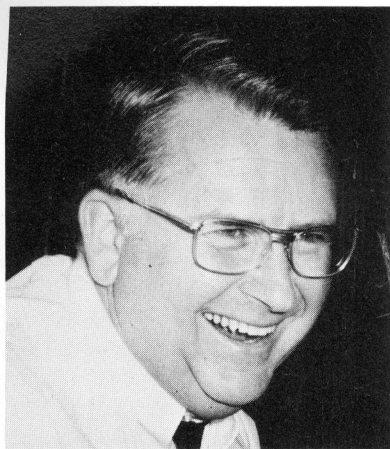
1602 fixed-head disk emulator

DEC, LSI-11 and PDP are registered trademarks of Digital Equipment Corporation.
Novadisc is a registered trademark of Data General Corporation.



DATARAM
CORPORATION

PRINCETON-HIGHTSTOWN ROAD CRANBURY, NEW JERSEY 08512
TEL: 609-799-0071 TWX: 510-685-2542



The National Computer Conference involves tremendous input of time and resources from many individuals, corporations, universities, government agencies and other organizations. These commitments have grown proportionately as the NCC expanded in size and scope over the years to become the current record-breaking, 1980 program.

Heading the list of contributors are the over 400 exhibiting companies participating in one of the largest NCC exhibit programs. Displays from virtually every branch of the computer industry will be on the exhibit floors, featuring the most modern equipment and latest services available to the industry. I recommend a full tour of the exhibit areas in the Convention Center as well as the exhibit area in the Disneyland Hotel. And don't miss the separate Personal Computing Exhibits also in the Disneyland Hotel.

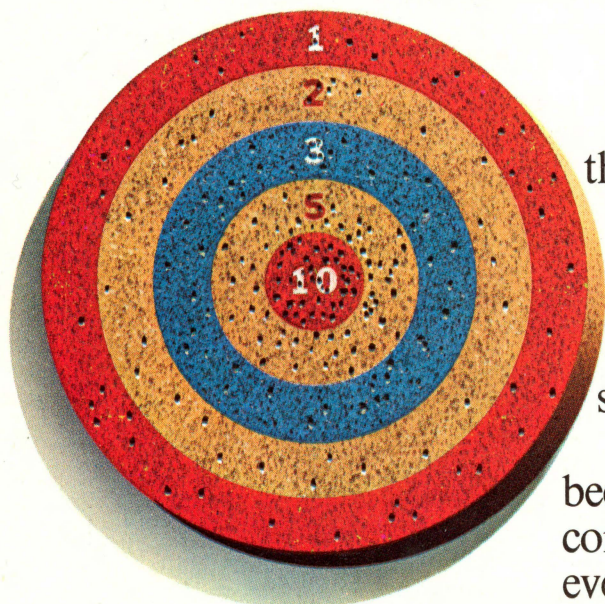
In addition to this comprehensive exhibit program, NCC '80 also includes a wide ranging series of program sessions and professional development seminars on a variety of industry-related topics. This series will focus on practical applications, theoretical concepts, regulatory policies, effective solutions to data processing problems, and social issues, among other subjects. All of these sessions are designed to enrich your visit to the NCC exhibits and I hope your schedule will allow you to attend those that best fulfill your information needs.

As chairman of the 1980 National Computer Conference Committee, I would collectively like to thank the many individuals whose efforts were directly responsible for this successful National Computer Conference. Conference Chairman, Herbert Safford, and the entire NCC '80 Steering Committee have devoted many hours of hard work to coordinate a conference informative and enjoyable for all attendees. The National Computer Conference Board has proved invaluable by virtue of its leadership and direction to the NCC throughout the years. The AFIPS staff has once again assisted all of us in their highly professional manner.

Plans are already in operation now for the 1981 NCC to be held May 4-7 in Chicago's McCormick Place. Conference Chairman Albert K. Hawkes and the Conference Steering Committee are hard at work on early plans for the 1981 NCC. I sincerely hope you find the 1980 National Computer Conference profitable and enjoyable, and that we may look forward to your attendance for many years to come.

Jerry Koory
Chairman
National Computer Conference

ONE OF THE GREAT MISCALCULATIONS IN IBM HISTORY.



In the early 1950's, we took a hard look at the future for business computer systems.

Our best estimate at the time was a potential of 50 new customers.

Yet in a relatively short time, we'd built and installed 75 systems. By the time the dust had settled, we'd sold 1500 of them.

It's hard to believe that a forecast could have been so wide of the mark. But then, as now, the computer industry continues to surprise nearly everyone.

Who would have dreamed, back in the 50's, that in less than 30 years the industry would install 500,000 systems in the U.S. alone.

Then again, who would have guessed that by 1980 the American economy would find itself with productivity problems. Or that, dynamic as computer technology has been, the need for computers would grow even faster.

So at IBM we're a bit wary about predicting the future. Still, there is one forecast we feel confident in making.

As long as the cost of using a computer keeps going down, and as long as there's a need for products that improve productivity, this looks like an industry with nowhere to go but up.

IBM®



Welcome to the 1980 National Computer Conference—the world's largest and most comprehensive. This year we've organized one of the most informative NCC's ever, providing a broad survey of the burgeoning computer industry. You'll be able to look into new application developments, see what new product forms are available, find out about the new problems that face the industry. Here are some suggestions for making your visit most productive.

Use your Exhibit Guide to help you get around this extensive computer exhibit. It includes the exhibitor booth listings, floor plans, product category index, and program schedules of a conference unmatched in its coverage of issues pertinent to the entire data processing community. Register for your own personal printout. Tell us what your specific information needs are and we'll use our computers to direct you to the exhibits and sessions that fit those needs. Attend the Personal Computing Festival, a full-fledged conference of its own, held at the Disneyland Hotel. The 3-day festival will include over 50 learning sessions, exhibit booths, and demonstration areas all focusing on computer applications and personal health, wealth and well-being. Participate in a full-day Professional Development seminar for an in-depth, detailed study in a particularly important area of interest for you. See our many special activities, including this year's highlight, Pioneer Day, honoring the 25th anniversary of SHARE, the prime mover of the whole user group movement. All the logistics — dates, times, locations — are listed in this guide. I'm sure you'll find this opportunity to participate in the complete computing experience highly valuable and highly enjoyable.

We are greatly indebted to many people for their contributions and support towards the successful production of NCC '80. Special note, however, should be taken of the first-class efforts of the Conference Steering Committee and the AFIPS staff.

Herbert B. Safford
Chairman
1980 National Computer Conference



A Small-Systems Breakthrough!

UDS Line-Powered Data Modems

- 0-300 bps full-duplex (Model 103 LP) or 0-1200 bps half-duplex (Model 202 LP) over ordinary two-wire telephone circuits
- No AC power required
- Fits under your telephone handset
- Easy hook-up
- Simplified controls — talk/data only
- Direct connect to dial-up network
- Better data integrity than acoustic couplers at the same (or lower) price

Patent Applied For

See us at NCC Booth Nos. 1700, 1701, 1703, 1800

Your telephone, combined with a UDS 103 LP or 202 LP modem, can put your computer system in contact with the rest of the DP world.

Make three easy snap-in cable connections and either of these FCC-approved devices is ready to go on-line. A front-panel rocker switch lets you go from voice to data and back again whenever you wish. Either the 103 or the 202 fits comfortably under your telephone — you'll hardly know the modem is there.

The UDS units are compatible with Bell 103- and 202-series modems.

SPECIFICATIONS

OPERATION — full-duplex (Model 103 LP) or half-duplex (Model 202 LP) on two-wire dial-up telephone circuits.

DATA RATE — 0-300 bps (Model 103 LP) or 0 to 1200 bps (Model 202 LP).

DIGITAL INTERFACE — RS-232C on both models; TTY current loop on Model 103 LP.

CONTROLS AND INDICATORS — Data/Talk switch; data ON light emitting diode.

DISTRICT OFFICES: Summit, N J, 201/522-0025 • Blue Bell, PA, 215/643-2336 • Atlanta, 404/952-3463 • Chicago, 312/441-7450 • Dallas, 214/385-0426 • Santa Ana, 714/972-4619 • Sunnyvale, 408/738-0433

"Confidence in Communications"

Universal Data Systems

5000 Bradford Drive • Huntsville, AL 35805 • Phone 205/837-8100



Member
IDCMA

**19
AM**

KEYNOTE ADDRESS

COMPUTER ARCHITECTURE

Covers design of equipment and supporting technologies, and distribution through networking. Includes decisions relating to supersystems, survivability systems and data base installation.

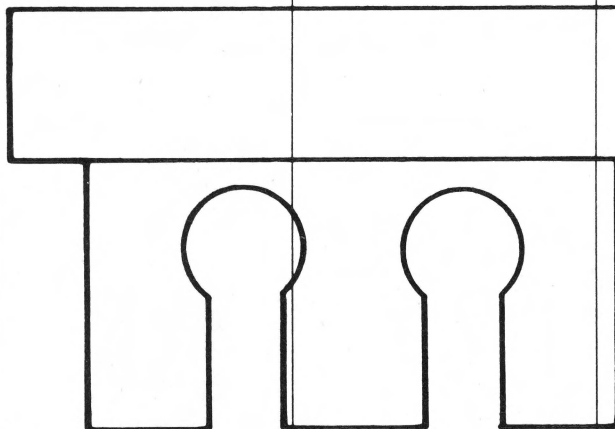
APPLICATIONS OF COMPUTER TECHNOLOGIES

Explores the use of computers in entertainment, microcomputers and their impact, management of the computing tool and staff, and the role of in-house and academic education and training.

DATA BASE MANAGEMENT & COMMUNICATIONS

State-of-the-art, user-oriented sessions on the storage, retrieval, and transfer of data. From hardware considerations to natural-language access to a data base.

This year's keynote address will be delivered at 9:30 a.m. by David Packard, Chairman of the Board, Hewlett-Packard Company.



**NOON
PM**

SPECIAL LUNCHEON SPEAKER: JOHN P. IMLAY, CHIEF EXECUTIVE OFFICER MANAGEMENT SCIENCE AMERICA (MSA)

S-3 1:30-3:00 pm Data Base Translation or Distributed Data Base Architecture

Steve Kimbleton
Institute for Computer
Science & Technology,
U.S. Dept. of Commerce

S-12 3:15-4:45 pm Survival Systems

Richard Merwin
George Washington Univ.

S-5 1:30-3:00 pm Change Management (Women In Data Processing)

Lorri Pitchell
Burroughs Corp.

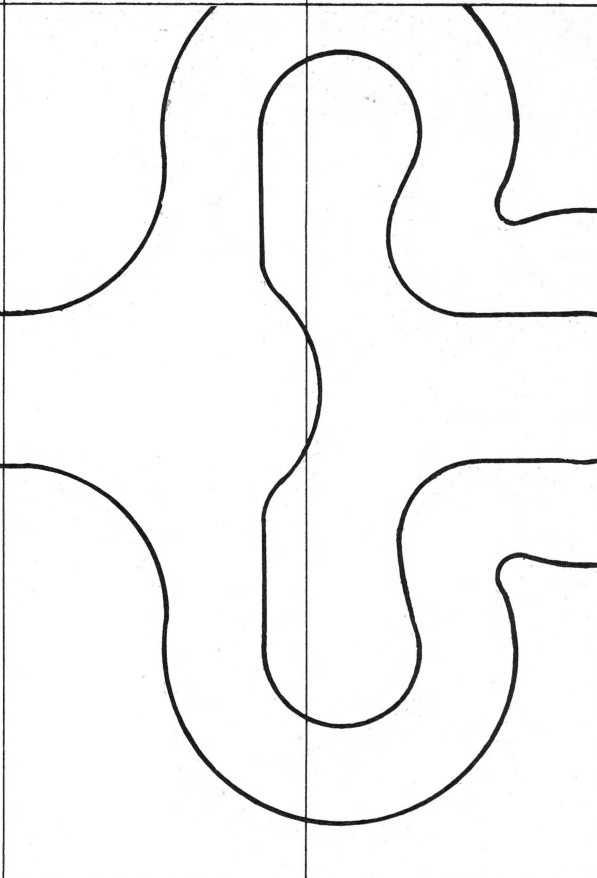
S-7 1:30-4:45 pm Data Base Design Practicum I & II

Jeffrey Hoffman
Case Western University
Donna Rund
Pacific Telephone

S-14 3:15-4:45 pm Architecture Of The Next Generation Of Data Base Management Systems

Dennis McLeod
USC

**DON'T MISS
THE CONFERENCE
RECEPTION,
6-8 PM TONIGHT.
GRAND
BALLROOM
DISNEYLAND
HOTEL.**

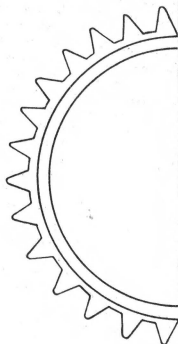
OFFICE AUTOMATION Every computer-related aspect of this explosive growth area, including electronic mail. How computers are used, managed, and integrated into an overall automated office.	SIMULATION TECHNOLOGIES Where we've been, where we are, and where we're going with computer modeling. Its value to small and large businesses and its role in decision support. Includes special session on solar energy simulation modeling.	SOFTWARE ENGINEERING TECHNOLOGIES Sessions on programming standards, software quality assurance, languages, and requirements engineering. Emphasis upon the needs and responsibilities of the user.	SOCIAL DYNAMICS AND SPECIAL TOPICS A broad spectrum of critical subjects: data security, legal issues, transborder data flow, societal impact, voice communications, venture capital and its effect upon technology.	IMAGE PROCESSING AND COMPUTERS IN MEDICINE How image processing is used and will be used in industry and medicine. Trends in facsimile data coding, compression, and standards. How doctors use image analysis display.
				

"INFORMATION TECHNOLOGY: THE INDUSTRY OF THE EIGHTIES"

An amusing, insightful overview of where we've been and where we're going in all aspects of the industry: manufacturing, software, computer sciences, word processing, and personal computing.

S-9 1:30-3:00 pm Developing Technologies Office Automation Systems Carolyn Watteeuw Office Of The Future, Inc.	S-8 1:30-3:00 pm Solar Energy Computer Simulation Modeling Leigh S. Rosenberg Jet Propulsion Laboratories	S-6 1:30-3:00 pm ADA—Where It Stands Now Hal Hart TRW	S-2 1:30-3:00 pm Privacy Protection In Transborder Data Flow Rein Turn Department of Computer Science Cal. State University	S-1 1:30-3:00 pm Medical Imaging Werner Frei USC Medical Imaging Group
S-15 3:15-4:45 pm Management Of Information Technologies The 80's Frank Kline International Data Corp.	S-16 3:15-4:45 pm Advances In Process Control Edgar Bristol The Foxboro Company		S-4 1:30-4:45 pm Venture Capital Kenneth W. Rind Xerox Development Corp.	S-10 3:15-4:45 pm Medical Education Neal Koss, M.D. Soc. For Computer Medicine
			S-11 3:15-4:45 pm Early Experiences In Complying With Foreign Restrictions In Foreign Privacy Laws Roger Allen Computer Science Corp.	
			S-13 3:15-4:45 pm The Social Dynamics Of Computing Use In Organizations Rob Kling Dept. Of Information & Computer Science University of California	

20 AM



COMPUTER ARCHITECTURE

Covers design of equipment and supporting technologies, and distribution through networking. Includes decisions relating to supersystems, survivability systems and data base installation.

S-19 8:00-9:30 am
Network Architecture
 Ira W. Cotton
 Booz, Allen & Hamilton, Inc.

APPLICATIONS OF COMPUTER TECHNOLOGIES

Explores the use of computers in entertainment, microcomputers and their impact, management of the computing tool and staff, and the role of in-house and academic education and training.

S-18 8:00-9:30 am
Computers In Amusements And Sporting Events
 David Snyder
 Walt Disney Productions

S-25 9:45-11:15 am
Computers And The Performing Arts
 William Ward
 Theater Arts Department
 UCLA

S-28 9:45-11:15 am
Application Development Methods And Systems
 Benn Konsynski
 Mary E.S. Loomis
 College Of Business & Public Administration
 University Of Arizona

S-26 9:45-11:15 am
Personal Computing: Societal Impacts And Future Directions
 David C. Rine
 College Of Business
 W. Illinois University

S-24 9:45-11:15 am
Motivators Vs. Demotivators In Improving Performance Of Computer Personnel
 Daniel J. Couger
 College Of Business & Administration
 University Of Colorado

DATA BASE MANAGEMENT & COMMUNICATIONS

State-of-the-art, user-oriented sessions on the storage, retrieval, and transfer of data. From hardware considerations to natural-language access to a data base.

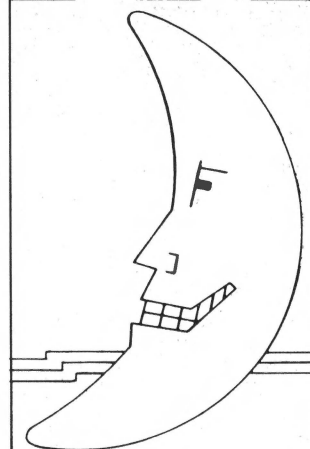
S-20 8:00-9:30 am
Concurrency, Consistency And Reliability In Distributed Data Base Management
 Bharat Bharagava
 University Of Pittsburgh

OFFICE AUTOMATION

Every computer-related aspect of this explosive growth area, including electronic mail. How computers are used, managed, and integrated in an overall automated office.

S-21 8:00-9:30 am
Office Automation And The Executive Suite: Success And Strategies
 Jim Carlisle
 Office Of The Future, Inc.

NOON PM



PLENARY SESSION 11:45-1:00 THE SMALL COMPUTER PHENOMENON AND ITS PRESENT AND FUTURE IMPACT

S-32 1:30-3:00 pm
Intelligent Memory
 Charles R. Vick
 BMDATC

S-36 1:30-3:00 pm
Supersystems 80's: Problems Of Designing And Programming
 Steven & Svetlana Kartashev
 University Of Nebraska

S-31 1:30-3:00 pm
Computer Support Behind The Scenes In Movie And Television Production

Charles Tucker
 Twentieth Century-Fox
S-33 1:30-3:00 pm
Tools For Growth
 Virginia C. Walker
 Department Of Energy

S-39 3:15-4:45 pm
Computer Use For Special Effects In Movies And Television
 William R. Deitrick
 Mini-Micro Systems, Inc.

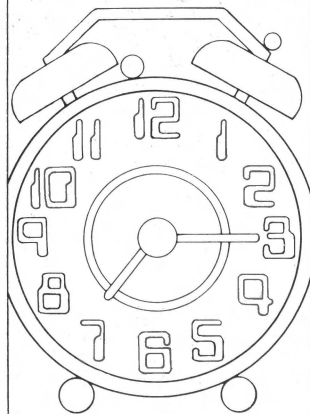
S-45 3:15-4:45 pm
Planning For Information Systems
 Ephraim R. McLean
 Graduate School of Management
 UCLA

S-30 1:30-3:00 pm
Distributed Minicomputer Networks
 Douglas J. Theis
 Aerospace Corp.

S-38 3:15-4:45 pm
Telecommunications From The Minicomputer User's Viewpoint
 David Peters
 Racal-Vadic, Inc.

SIMULATION TECHNOLOGIES Where we've been, where we are, and where we're going with computer modeling. Its value to small and large businesses and its role in decision support. Includes special session on solar energy simulation modeling.	SOFTWARE ENGINEERING TECHNOLOGIES Sessions on programming standards, software quality assurance, languages, and requirements engineering. Emphasis upon the needs and responsibilities of the user.	SOCIAL DYNAMICS AND SPECIAL TOPICS A broad spectrum of critical subjects: data security, legal issues, transborder data flow, societal impact, voice communications, venture capital and its effect upon technology.	IMAGE PROCESSING AND COMPUTERS IN MEDICINE How image processing is used and will be used in industry and medicine. Trends in facsimile data coding, compression, and standards. How doctors use image analysis display.	PROFESSIONAL DEVELOPMENT SEMINARS Full and half-day seminars for the professional who wants to come away with solutions and ideas he can implement now. Half-day seminars tie in with regular program sessions.
S-17 8:00-9:30 am Numerical Methods For the 80's Roger Firestone Sperry Univac	S-22 8:00-9:30 am Mumps—The David And Goliath Story In Software Engineering Henry Heffernan MUG S-23 8:00-11:15 am Implementing A Software Management Discipline Richard H. Thayer Data Automation Branch Sacramento Air Logistics Ctr. S-29 9:45-11:15 am Pascal In The Real World A. Windsor Brown General Automation	S-27 9:45-11:15 am User Requirements And Software Specifications David L. Holzman Annenburg School of Communications USC		Half Day (am) P-1 A Pragmatic View Of Distributed Processing Systems Kenneth J. Thurber Consultant P-2 Designing & Programming Parallel Systems With Dynamic Architecture Steven & Svetlana Kartashev Dynamic Computer Architecture Half Day (pm) P-3 Quality Control For Software Ned Chapin Information Science, Inc. Full Day P-4 Performance Measurement In Systems And Programming John Toellner Spectrum International
EDSON DE CASTRO, PRESIDENT AND CHIEF EXECUTIVE OFFICER, DATA GENERAL CORP. One of the fathers of the minicomputer, Mr. De Castro will focus upon the ways small computers are affecting every area of business and society.				
S-44 3:15-4:45 pm Micro: An Architecturally Flexible Multi-Processor Multi Memory Session Claude Wiatrowski University Of Colorado	S-37 1:30-3:00 pm Software Engineering Education: Needs And Strategies Barry W. Boehm TRW S-35 1:30-3:00 pm High Level Languages For Micro Processors John Brackett Softech Microsystems S-41 3:15-4:45 pm Economics Of Software—How Can We Improve It Ed Dodson GRC	S-34 1:30-3:00 pm Microcomputers And Privacy Lance Hoffman George Washington Univ. S-42 3:15-4:45 pm In House Information Systems Bob Johansen Institute For The Future S-43 3:15-4:45 pm Libraries Of The Future Coleen Cayton Development Office Denver Public Library		P-5 Structuring The Data Base System Project Leo Cohen Performance Development Company P-6 Software Design Techniques Peter Freeman Consultant P-7 Computer Security Carl Hammer Research Consulting Services P-8 The Structured Techniques And The Project Life Cycle Of The 1980's Timothy R. Lister Yourdon, Inc.

21 AM



COMPUTER ARCHITECTURE
Covers design of equipment and supporting technologies, and distribution through networking. Includes decisions relating to supersystems, survivability systems and data base installation.

S-48 8:00-9:30 am
Issues Of Data Base Machine Design
Stanley Su
Computer & Information Sciences Dept.
University Of Florida
Eugene Lowenthal
Intel

APPLICATIONS OF COMPUTER TECHNOLOGIES
Explores the use of computers in entertainment, microcomputers and their impact, management of the computing tool and staff, and the role of in-house and academic education and training.

S-51 8:00-9:30 am
Decision Support System
Don Aharonian
Digital Equipment Corp.

S-52 8:00-9:30 am
Education In Information Systems
Roland Spaniol
Eastern Illinois University

DATA BASE MANAGEMENT & COMMUNICATIONS
State-of-the-art, user-oriented sessions on the storage, retrieval, and transfer of data. From hardware considerations to natural-language access to a data base.

S-46 8:00-9:30 am
Keys To Distributed Processing
Bob Holland
Database Design Corp.

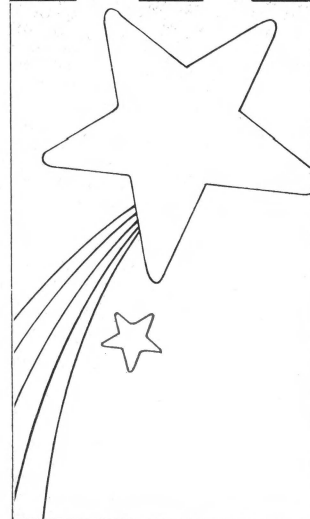
S-54 9:45-11:15 am
Data Base Technology
Nan Shu
IBM Research
David Jefferson
Naval Shipyard
Research, David Taylor
Naval Ship R & D Center

OFFICE AUTOMATION
Every computer-related aspect of this explosive growth area, including electronic mail. How computers are used, managed, and integrated in an overall automated office.

S-50 8:00-9:30 am
Applications Of Office Automation
Peter Chen
Graduate School Of Management
UCLA

S-57 9:45-11:15 am
Modelling Of The Office Procedures
D. Terchrit
University Of Toronto

NOON PM



PLENARY SESSION 11:45-1:00

S-67 1:30-3:00 pm
Computers In Animation
Stephan Levine
Lawrence Livermore Labs

S-66 1:30-3:00 pm
Control And Audit
Eugene Smith
USDA
Communications & Data Services Division

S-69 3:15-4:45 pm
How To Recruit, Develop And Retain Top D.P. Talent

James Stallard
General Dynamics

S-73 3:15-4:45 pm
Distributed Systems
Bennet P. Lientz
UCLA

S-63 1:30-3:00 pm
The Many Voices Of Data Base Management
Edward L. Glaser
Ampex Corporation

S-61 1:30-4:45 pm
Electronic Mail: Current Developments And State Of The Art
Walter E. Ulrich
Consultant

**LATION
NOLOGIES**

we've been,
we are, and where
going with computer
ing. Its value to
and large business-
its role in decision
t. Includes special
on solar energy
tion modeling.

9:45-11:15 am
ives Credibility To
P

Gerald R. Wagner
Execucom, Inc.

**SOFTWARE
ENGINEERING
TECHNOLOGIES**

Sessions on programming
standards, software qual-
ity assurance, languages,
and requirements engi-
neering. Emphasis upon
the needs and responsibil-
ities of the user.

S-49 8:00-9:30 am
Software
Reliability—Needs And
Responses

John Musa
Bell Laboratories

S-56 9:45-11:15 am
Current Trends In
Software Reliability

Myron Lipow
TRW

S-59 9:45-11:15 am
Software Requirements
Engineering—An
Interdisciplinary View

Pei Hsia
University of Alabama
Huntsville

**SOCIAL
DYNAMICS AND
SPECIAL TOPICS**

A broad spectrum of criti-
cal subjects: data security,
legal issues, transborder
data flow, societal impact,
voice communications,
venture capital and its
effect upon technology.

**IMAGE PROCESSING
AND COMPUTERS
IN MEDICINE**

How image processing is
used and will be used
in industry and medicine.
Trends in facsimile data
coding, compression, and
standards. How doctors
use image analysis
display.

S-53 9:45-11:15 am
Image Understanding

Larry Druffel
DARPA/IPTO

**PROFESSIONAL
DEVELOPMENT
SEMINARS**

Full and half-day semi-
nars for the professional
who wants to come away
with solutions and ideas
he can implement now.
Half-day seminars tie
in with regular program
sessions.

Half Day (am)

P-9

Data Processing
Management Styles:
Selecting The Successful
Approach

Paul H. Rosenthal
Gottfried Consultants, Inc.

P-10

Software Tools

Donald J. Reifer
Software Management
Consultants Association

Full Day

P-11

Update On Small
Computer Systems

Raymond Wenig
International
Management Services

P-12

Packaging Your Image
For Success

Barbara A. Pletcher
Creative Sales
Careers, Inc.

P-13

How To Develop
A Long Range Plan

Ben Knowles
Brandon Systems Institute

SPEAKER: DONN B. TATUM, CHAIRMAN OF THE BOARD
WALT DISNEY PRODUCTIONS

1:30-3:00 pm
ation—A Planning

Paul Gray
Department Of
Management
Science & Computers
Fox School Of Business
SMU

S-64 1:30-3:00 pm
Tools For Verification And
Validation
A State Of The Art Report

Sabina Saib
GRC

S-65 1:30-3:00 pm
Software Requirements
Engineering: A Tool
Developer's View

Carl G. Davis
Data Processing
Directorate

S-72 3:15-4:45 pm
Software Requirements
Engineering—From A
User Viewpoint

John Mitchell
Department Of The Army
Georgia Institute Of
Technology

S-71 3:15-4:45 pm
Software Tools/The
Program Development
Environment

Leon Stucki
BCS

1:30-4:45 pm
PIONEER DAY
The Founding Of SHARE

S-70 3:15-4:45 pm
Changing Technologies
Of Recording Data

C. Paul Davis
Innovative Computer
Products

S-74 3:15-4:45 pm
Auditing Systems Security

Robert Campbell
Advanced Information
Management

S-60 1:30-3:00 pm
Modern Trends In
Facsimile Data
Compression

William K. Pratt
Compression Labs, Inc.

S-68 3:15-4:45 pm
Real Time Image
Processing

Tom Wiener
DARPA

P-14

An Overview Of
Distributed Processing

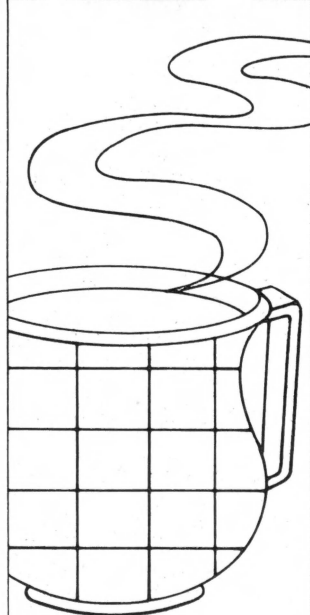
Marshall D. Abrams
National Bureau Of
Standards

P-15

Software Engineering
That Works

Gopal Kapur
Kapur Associates

22 AM



COMPUTER ARCHITECTURE
Covers design of equipment and supporting technologies, and distribution through networking. Includes decisions relating to supersystems, survivability systems and data base installation.

S-84 9:45-11:15 am
Data Base Processors
Eugene Lowenthal
Intel

APPLICATIONS OF COMPUTER TECHNOLOGIES
Explores the use of computers in entertainment, microcomputers and their impact, management of the computing tool and staff, and the role of in-house and academic education and training.

S-87 9:45-11:15 am
Microprocessing: Facilities, Training, And Applications
T.C. Brown
Computer Sciences Corp.

DATA BASE MANAGEMENT & COMMUNICATIONS
State-of-the-art, user-oriented sessions on the storage, retrieval, and transfer of data. From hardware considerations to natural-language access to a data base.

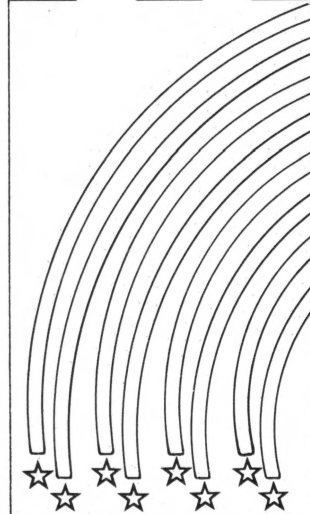
S-79 8:00-9:30 am
Implementing A Data Management Plan And Query Approaches
Linda Taylor
Systems Development Corp.

S-85 9:45-11:15 am
Tightly Coupled Distributed Architecture Design
Ed Lee
TRW

OFFICE AUTOMATION
Every computer-related aspect of this explosive growth area, including electronic mail. How computers are used, managed, and integrated in an overall automated office.

S-80 8:00-9:30 am
The Developing Information Infrastructure
Russell Abbot
Department Of Computer Science
Cal. State University

NOON PM



PLENARY SESSION 11:45-1:00
THE IMPACT OF A WORLDWIDE COMPUTER SUPPLIERS' MARKET

S-90 1:30-3:00 pm
CONLAN—A Formal Construction Method For Hardware Description Language Derivation
Robert Piloty
CONLAN

S-96 3:15-4:45 pm
Impact VLSI (I/O CHIPS)
Ray Voith
Motorola, Inc.

S-94 1:30-3:00 pm
Techniques For Improving DP Staff Performance
Joseph Izzo
Joseph Izzo Associates

S-98 3:15-4:45 pm
Management: New Concerns And Opportunities
F.E. Graham
Computer Devices Inc.

S-101 3:15-4:45 pm
Practical Natural Language Access To Data Base
Norm Sondheimer
Sperry Univac

S-97 3:15-4:45 pm
Distributed Processing Systems Concepts
Alyce Jackson
TRW

SIMULATION TECHNOLOGIES Where we've been, where we are, and where we're going with computer modeling. Its value to small and large businesses and its role in decision support. Includes special session on solar energy simulation modeling.	SOFTWARE ENGINEERING TECHNOLOGIES Sessions on programming standards, software quality assurance, languages, and requirements engineering. Emphasis upon the needs and responsibilities of the user.	SOCIAL DYNAMICS AND SPECIAL TOPICS A broad spectrum of critical subjects: data security, legal issues, transborder data flow, societal impact, voice communications, venture capital and its effect upon technology.	IMAGE PROCESSING AND COMPUTERS IN MEDICINE How image processing is used and will be used in industry and medicine. Trends in facsimile data coding, compression, and standards. How doctors use image analysis display.	PROFESSIONAL DEVELOPMENT SEMINARS Full and half-day seminars for the professional who wants to come away with solutions and ideas he can implement now. Half-day seminars tie in with regular program sessions.
	S-78 8:00-11:15 am Software Engineering Technology Transfer Lorraine M. Duvall IIT Research Institute S-81 8:00-9:30 am Software Quality Assurance Kurt F. Fischer Computer Sciences Corp.	S-75 8:00-9:30 am Mass Market Computers Revisited David Lien Compusoft, Inc. S-76 8:00-9:30 am Green Thumb Concept Of Data Dissemination Louis J. Brocato USDA, SEA, CDS S-77 8:00-9:30 am Communication Protection: A New Concern J. Michael Nye Marketing Consultants International, Inc. S-82 9:45-11:15 am Energy Considerations In Computer Installations Helen Alex USGS, Conservation Div. S-83 9:45-11:15 am System Concept Development And Configuration Selection William E. Farley U.S. Dept. Of Agriculture S-86 9:45-11:15 am Social Impacts Of Personal Computing Jack Nilles Office Of Exec. VP, USC		Half Day (am) P-16 Transition From Technician To Manager James F. Townsen Townsen Associates P-17 Design By Objectives Tom Gilb Consultant Full Day P-18 Contract Negotiations Joseph Auer International Computer Negotiations, Inc. P-19 Data Base Machines Are Coming Back David K. Hsiao Dept. of Computer & Information Sciences Ohio State University P-20 Future Computing Portia Isaacson Electronic Data Systems P-21 Evaluating Text Editing And Office Automation Systems Amy D. Wohl Integrated Technologies, Inc.
ROBERT T. COWAN, VICE PRESIDENT, C. ITOH ELECTRONICS, INC. Since 1979, when he joined Itoh after 12 years with Calcomp, Mr. Cowan has been responsible for establishing computer peripherals activity in North and South America.				
S-99 3:15-4:45 pm Software Models History, Current Status And Future Directions Norman F. Schneidewind Naval Postgraduate School S-100 3:15-4:45 pm Simulation In Small Business Jon Prescott J&S Associates	S-91 1:30-3:00 pm Quantitative Measures Of The Quality Of Programs And Systems Ned Chapin INFOSCI, Inc. S-103 3:15-4:45 pm Computer Software Standards Leo Gardener Army Armament Research & Development Command S-102 3:15-4:45 pm Software Testing Edward F. Miller Software Research Associates	S-88 1:30-3:00 pm Social Service Delivery Systems. An Overview Louis P. Yannaco Mathematica Policy Research Inc. S-89 1:30-3:00 pm Trusted Computer System Developments Stephen T. Walker Department Of Defense S-92 1:30-3:00 pm Computerized Production And The Worker: 3 Views From The Shopfloor Philip Kraft Dept. Of Sociology, SUNY S-93 1:30-3:00 pm Recent Developments In Privacy Protection In The United States A.D. Roth, AFIPS S-95 1:30-4:45 pm Voice Communications With Computers J. Michael Nye Mktg. Conslts. Int'l, Inc.		P-22 Shifting Gears to Matrix Management A.D. Martin Professional Development Institute

ALPHABETICAL INDEX TO EXHIBITING COMPANIES

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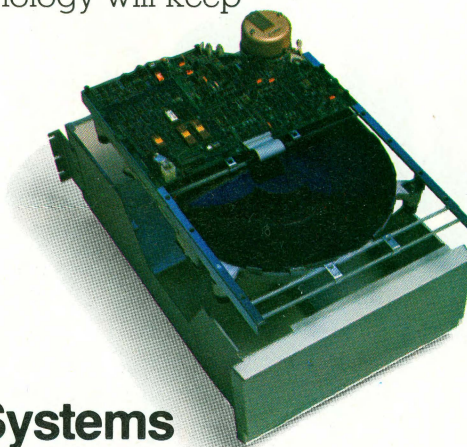
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Ann Arbor Terminals will be displaying a broad range of CRT terminals and display electronics, including KSR, batch/edit and RO units. The Model 6000, and ANSI-based user definable terminal will be introduced. This unit incorporates a variety of edit, send and move commands. High density displays and graphics are also available.

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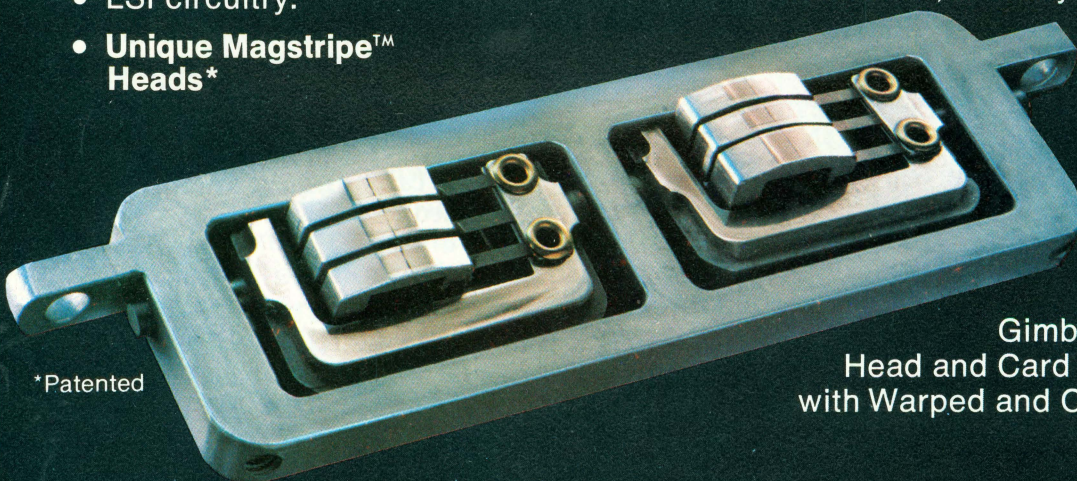


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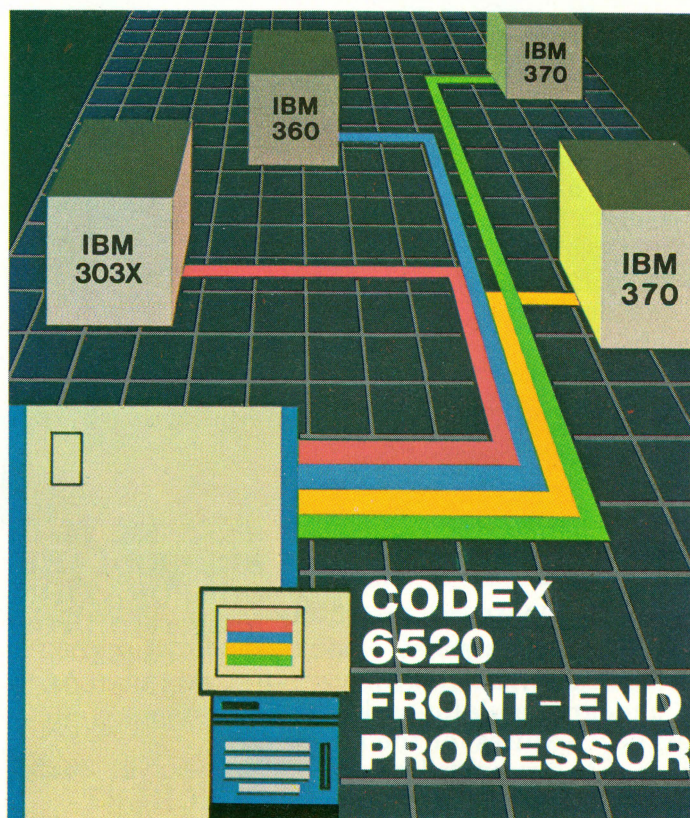
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BASIS is an information storage and retrieval system that offers users the ability to define applications and begin loading data within a few days. No computer programming is required for most implementations. BASIS provides an ANSI-standard thesaurus, procedure files to capture user interactions, an on-line report writer, an on-line data entry processor, and an on-line sorting capability.

Booth No. 1240, 1242, 1244
BDT PRODUCTS, INC.
18381 Bandilier Circle,
Fountain Valley, CA
92708
(714) 964-4722

BDT manufactures a full line of paper handling equipment for use with most word processing system printers. Included in the line are front feed form insertion devices, bi-directional forms tractors and a complete family of automatic sheet feeders including single sheet and double sheet versions for Diablo, Qume, NEC and Data Products printers.

Booth No. 1227
BEEHIVE
INTERNATIONAL
4910 Amelia Earhart Dr.,
Salt Lake City, UT 84125
(801) 355-6000

Introducing the MICRO 4400 -- communications oriented, soft programmable terminal with industry standard emulator packages. Plus new features for the DM Series smart terminal line, including four-page memory, 16-variable length soft function keys, composite video, etc. These products are designed for the custom and OEM markets and move Beehive in the direction of more intelligent systems.

Booth No. 4439, 4441
BELL & HOWELL
DISPLAY DEVICES
4000 Birch Street, Newport
Beach, CA 92660
(714) 752-7602

Booth No. 1507
BELL SYSTEM/AT&T
195 Broadway, New York,
NY 10007
(212) 393-3629

Communications equipment.

Booth No. 4123
BENSON-VARIAN, INC.
385 Ravendale Drive,
Mountain View, CA 94043
(415) 965-9900

Benson-Varian offers pen plotters and electrostatic printer/plotters for every application, in widths from 8" through 36". Electrostatics plot up to 4 ips and print 2000 lpm. Pen plotters with built-in linear and circular interpolation, can draw 44.5 ips diagonally at 6g acceleration.

Graphware I hardware vector-to-raster converter for minicomputers and Graphware 1000 microprocessor-based controller for on-line, off-line or remote graphics from IBM and other PCM's are exhibited.

Booth No. 1320
BENWILL PUBLISHING
CORPORATION
1050 Commonwealth Ave.,
Boston, MA 02215
(617) 232-5470

Publications -- Minicomputer News, Personal Computing, Electronics Test, Digital Design.

Booth No. 2551
BERGER-LAHR
CORPORATION
Fitzgerald Drive, Jaffrey,
NH 03452
(603) 532-7001

Booth No. 2659, 2661
BOSCHERT
INCORPORATED
384 Santa Trinita Avenue,
Sunnyvale, CA 94086
(408) 732-2440 Ext. 276

Switching power supplies and submodules for data processing and telecommunications equipment. Open-frame multiple output units in the 25-400 watt power range for OEM applications such as word processing systems, computer peripherals and micro-

computer systems. New line of high power, single output, enclosed supplies for mainframe, minicomputers and memory systems.

Booth No. 4001-4019, 4100-4118
BRITISH TRADE
DEVELOPMENT OFFICE
3100 Massachusetts Avenue,
N.W., Washington, DC
20008
(202) 462-1340

British computer products and services.

Booth No. 2346
BTI COMPUTER SYSTEMS
870 West Maude Avenue,
Sunnyvale, CA 94086
(408) 733-1122

Interactive, multi-user computer systems.

Booth No. 3215, 3217, 3219, 3221, 3223, 3225
BURROUGHS CORP.
Burroughs Place, Detroit,
MI 48232
(313) 972-7266

Burroughs will feature a wide range of information management and office automation systems including:

- Computer systems
- Products for distributed processing and data communications
- Software products
- Data entry and data preparation subsystems
- fax facsimile transmission equipment
- Word processing systems

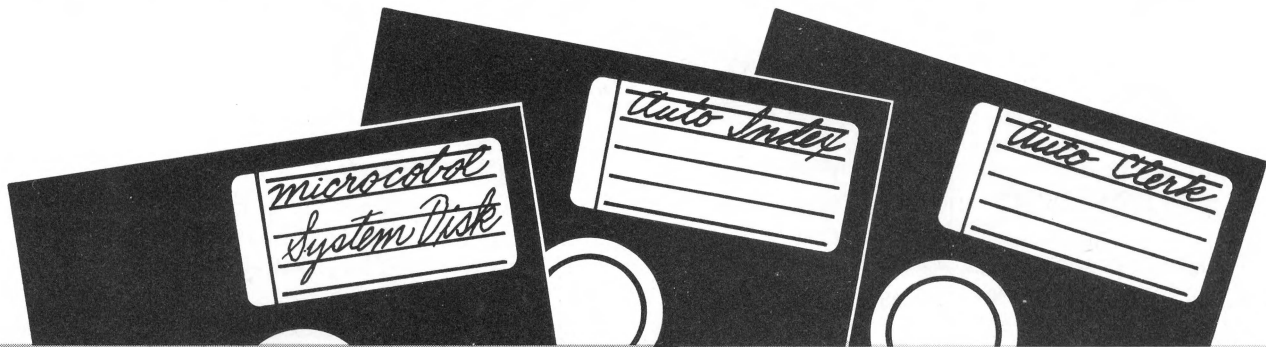
Booth No. 4015
BUSINESS EQUIPMENT
TRADE ASSOCIATION
See British Trade Development Office Listing

Booth No. 2629
CALIFORNIA COMPUTER
PRODUCTS, INC.
(CalComp)
2411 W. La Palma Avenue,
Anaheim, CA 92801
(714) 821-2011

Highlighting CalComp's exhibit will be the latest additions in

Interested in Software Portability?

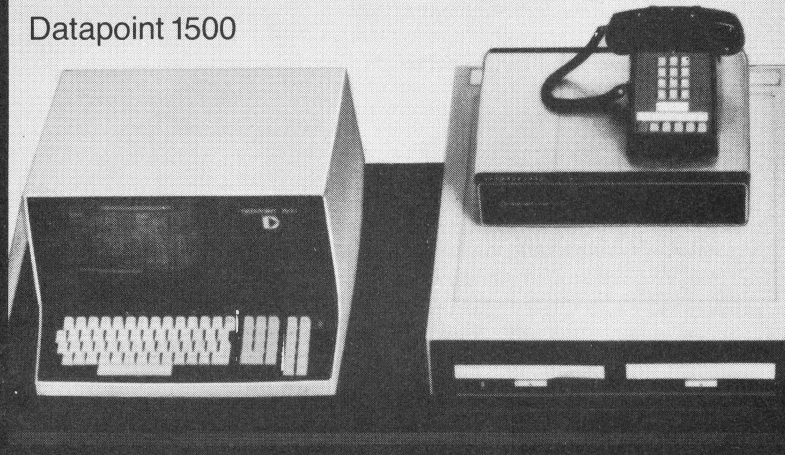
Then, don't miss DDI's
MICROCOBOL® demo in Booth 3022!



Durango F-85



Datapoint 1500



Now marketing Datapoint as well as Durango, DDI will show you the small systems—and the software—that provide large companies with the most cost effective stand-alone operations to serve present and future needs. Our MICROCOBOL demonstration is a case in point. You'll see the only small systems software of its kind...designed to provide both programmers and non-technical users with total control, while enabling them to switch to other manufacturers' equipment without rewriting programs!

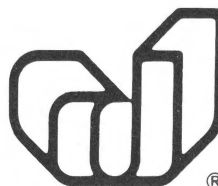
THE CAPABILITIES OF MAINFRAME COBOL—PLUS! With DDI's new MICROCOBOL Software System, you get:

- A machine-independent Operating System
- A Program Development System, including: an interactive text editor, MICROCOBOL compiler, linkage editor and librarian.
- AutoClerk report generator system
- AutoIndex data management system
- Data entry package
- ISAM and RSAM file management
- Multitasking
- Synchronous and asynchronous communications

- Plus—fully tested business applications

With AutoClerk and AutoIndex, programmers can quickly produce test data files and reports without programming effort. Non-technical users can easily develop, amend or inspect business data files, and create reports.

MICROCOBOL is a registered trade name of CAP-CPP



**Data Dimensions,
Inc.**

99 River Road, Cos Cob, CT 06807
TEL: (203) 622-0500

BRANCH OFFICES: New York City (212) 687-2030 • Philadelphia (609) 662-2833 • Cincinnati (513) 769-0680 • Detroit (313) 589-9250 • Chicago (312) 858-3770
Atlanta (404) 433-2023 • St. Louis (314) 432-6121 • Dallas (214) 387-2222 • Houston (713) 961-4711 • Los Angeles (213) 990-9200 • San Francisco (415) 349-7262

the company's line of graphics products--a 52-inch wide beltbed plotter and a six-foot-wide drum plotter. The 970 Beltbed Plotter uses cut sheet media, while the 1065 Drum Plotter uses continuous rolls of paper. Both plot at 30 inches/second.

Also being demonstrated are a high-resolution, high-speed electrostatic printer/plotter, a desktop plotter, a graphics COM system and online and offline plotter controllers.

Booth No. 1221
CARACTERES USA, INC.
 c/o Mintz, Levin, Cohn,
 Glovsky and Popeo, One
 Center Plaza, Boston, MA
 02108
 (617) 742-5800

Switzerland 0041/38/25 07
 22

Types like drums, discs, balls, wheels, slugs, sectors, bands, barrels, bars, chains, printing heads, etc.

Booth No. 1217, 1219
CENTIGRAM
CORPORATION
 155A Moffett Park Drive,
 Suite 108, Sunnyvale, CA
 94086
 (408) 734-3222

MIKE II, a voice recognition and response system that achieves high recognition reliability for vocabularies consisting of isolated words and short phrases; available as a stand-alone device for evaluation by prospective customers and in OEM configurations. Applications include a variety of hand and eye-busy situations as well as entry of commands, queries, and data into computer-based information systems. RS-232C interface; serial or parallel ASCII. Voice response feature for answers to queries, confirmation of input recognition, or operator prompts is available as an integral feature.

Booth No. 1548
CENTRONICS DATA
COMPUTER CORP.
 One Wall Street, Hudson,
 NH 03051
 (603) 883-0111 Ext. 4005

Centronics, an independent prin-

ter manufacturer, will display a complete line of peripheral printers. Technologies include dot matrix, band line, electrographic, and stylus. Centronics printers are capable of handling requirements ranging from data processing to word processing.

Booth No. 4401, 4403, 4405,
4407, 4409, 4411
CENTURY DATA
SYSTEMS
 1270 N. Kraemer, Anaheim,
 CA 92806
 (714) 632-7500

CDS will feature Trident, Marksman, Hunter & Diablo disk drives. The Trident line will include the T-50, T-300 and the new T-600 double density drive. The Marksman family will feature the 40MB Marksman drive and the Intelligent Marksman with interface formatted capacity. Hunter drives will include the Intelligent Hunter and the Hunter storage system providing daisy chain capability of up to four disk drives. Century Data will also exhibit the 10MB Diablo 44B drive.

Booth No. 2647, 2649, 2651,
2653, 2655, 2657
CHROMATICS, INC.
 3923 Oakcliff Industrial
 Court, Atlanta, GA 30340
 (404) 447-8797

Booth No. 1456, 1458
CII HONEYWELL BULL
BCA, c/o Honeywell Info.
Sys., 200 Smith St., MS 430,
Waltham, MA 02154
(617) 895-6020

Cii Honeywell Bull will exhibit several models of its D100 high density rigid disk drive family, including the previously announced:

Model D120 - 10 megabyte removable cartridge only

Model D140 - 20 megabyte, 10 fixed plus the 10 removable cartridge

Model D160 - 60, 90 or 120 megabyte non removable disks. which are all compatible through the D100 interface and very compact; 5.6" x 12.2" x 21.0" for the D120 and D160, 6.6" x 12.2" x 21.0" for the D140.

Booth No. 1729, 1731, 1733,
1735
CIPHER DATA
PRODUCTS, INC.
 5630 Kearny Mesa Road,
 San Diego, CA 92111
 (714) 279-6550

Streaming tape is the central theme of products exhibited. On display is the F880 Microstreamer™, the 100% disk backup which features total autoloading.

Series 900 vacuum column drives and Series 100, 80 and 70 tension arm drives are also exhibited.

Booth No. 2222
CIRCUIT ASSEMBLY
CORP.
 3169 Red Hill Avenue,
 Costa Mesa, CA 92626
 (714) 540-5490

Dip Interconnects, Dip-Sockets, Dip Plugs, Connectors, Stampings, Injection Molding, Contacts, All Types Electronic Packaging Components.

Booth No. 3206
CLINTON ELECTRONICS
CORPORATION
 6701 Clinton Road,
 Rockford, IL 61111
 (815) 633-1444

Booth No. 1566, 1568
CMP PUBLICATIONS
 333 East Shore Road,
 Manhasset, NY 11030
 (516) 829-5880

Computer Systems News, a newspaper for system builders and volume end users.

Booth No. 2341
CODEX CORPORATION
 20 Cabot Blvd., Mansfield,
 MA
 (617) 364-2000

A leader in the design of state-of-the-art data communications equipment, Codex will feature the 6500 Series Communications Front-End Processor which is plug compatible with the IBM 270X/370X unit, and features multi-host support for IBM 360/370/303X CPU's. Ad-

Tomorrow's Database Software, Today.

When your long-range plan for database software systems includes Cullinane's comprehensive and fully integrated family of advanced database software products, you don't have to wait five years to make it happen.

Because IDMS is truly a data dictionary-driven system, any component you require—regardless of when you acquire it—is fully integrated with the DBMS via the data

dictionary with great attendant benefits.

For example, a dictionary-driven teleprocessing system can be reconfigured dynamically without ever bringing the system down and disrupting operations.

Also, it is now possible to have a fully automated applications development system which will greatly improve programmer productivity in years to come.

Database Management

IDMS is the state-of-the-art database management system for use in the IBM environment (including the new 4300 series). The only DBMS named to the Datapro Honor Roll for four consecutive years.

Data Communications

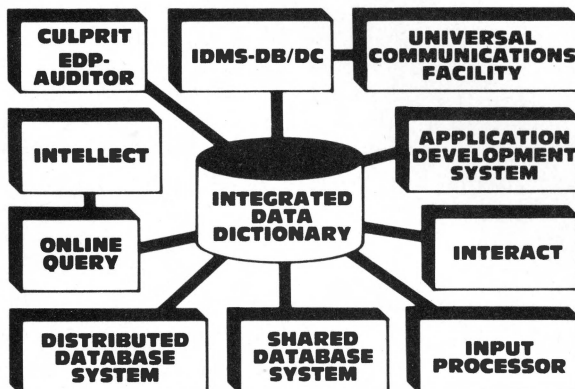
IDMS-DC is the only data communications system designed specifically for use in the database environment. Fully integrated with IDMS, IDMS-DC therefore gives faster response time, more economical use of memory and greater simplicity of use than any other TP monitor can in a sophisticated multi-terminal configuration. IDMS-DC provides a powerful recovery facility, mapping support, storage protection and many more superior programmer productivity and data integrity features.

Integrated Data Dictionary

IDD is the only "active" data dictionary because it is fully integrated with a database system. It is a powerful design and control tool for use with IDMS and with the other Cullinane software components, yet it can be used as a stand-alone system to define and standardize all data resources whether manual or automated, database or conventional file systems. IDD supports FORTRAN, COBOL, PL/I and Assembler.

Report Generator

CULPRIT can be used to produce even the most complex reports quickly, easily and with a bare minimum of coding. It can access virtually any file structure including conventional files or databases. CULPRIT is economical. It can produce up to 100 reports with a single pass. CULPRIT can be used as a powerful stand-alone or as part of a fully-integrated database management system from Cullinane. EDP AUDITOR combines the capabilities of CULPRIT with a special Library of Audit Routines to make it the premiere audit package available.



INTELLECT

This sophisticated English language inquiry system is designed for use by those in top management who have no background in computers, but have a need for timely information. Operating with a large, flexible dictionary, this new system has an outstanding ability to respond to conversational questions.

OnLine Program Development

INTERACT is an online system for program development, remote job processing, text editing and word processing. INTERACT is the programmer productivity system. It offers a powerful command repertoire, fast terminal response time, and economical CPU requirements.

Input Processor

IDMS-Input allows programmers, as well as non-technical end users, to develop application programs in an IDMS batch environment. This new product comes with its own simple language, making it easier and faster to program with IDMS-Input than with traditional programming languages.

Universal Communications Facility

Applications developed with IDMS/UCF will run under any TP monitor without modification—a truly major technical accomplishment. With IDMS/UCF, programmers don't even have to know the characteristics of the TP monitor they are using or may use. Applications will execute equally well through terminals connected to CICS, SHADOW II, Intercomm, Westi, Task/Master and others.

OnLine Query

OnLine Query. Release 2.0, is a major new advance in interactive information retrieval systems. Fully integrated with IDMS, it requires no programming in order to be immediately useful upon installation. OnLine Query provides managers and user departments with a powerful, easy-to-use set of English commands that allow instant access to selected information stored in the database.

ESCAPE

ESCAPE is an interface that lets a DL/I application program access an IDMS database. Now, users with an investment in DL/I applications can take advantage of the benefits of IDMS without having to re-write their DL/I programs. And, IDMS users can take advantage of the many useful DL/I programs available from independent vendors.

Distributed Database

Cullinane's Distributed Database System allows multiple IBM computers to share a common IDMS database. Distributed database is a unique Cullinane capability. For the first time you can support applications programs at remote sites and allow them to access a central database with complete user transparency and full data integrity. Cullinane Distributed Database is the system of the future—available today.

Cullinane Corporation
20 William Street,
Wellesley, MA 02181
Phone (617) 237-6600



Start planning for the future today. Visit us, Booth #1725, for information on these products, plus a schedule of our free management seminars.

Database: Cullinane

vanced central site system monitoring and optimum network control capabilities will be displayed in the Codex Distributed Network Control System. Also on display will be the new Info-guard Data Security System and Digiphone Voice Digitizer. The total Codex product line of modems, multiplexers and network enhancement products will be demonstrated at Booth #2341.

Booth No. 4436
COMPUGRAPHIC CORP.
80 Industrial Way,
Wilmington, MA 01887
(617) 944-6555 Ext. 2891

MDT-400 series of low-cost user programmable intelligent terminals including the MDT-402 mini-disk system and the new multi-disk MDT-405. All members of the MDT-400 family are price/performance leaders and can be used for data entry, data communications, text processing or distributed processing.

Booth No. 3014
COMPUTER
AUTOMATION, INC.
NAKED MINI® DIVISION
18651 Von Karman, Irvine,
CA 92713
(714) 833-8830

A variety of NAKED MINI 4 minicomputer family products for the OEM. Highlighted is SCOUT™ (NM 4/04), a small size, low-cost, 16-bit minicomputer with the ISOLITE™ self-testing feature. Accompanying SCOUT are newly announced enhancements, including mass storage; broadened line of process control/industrial automation interfaces; rack-mountable card cages; and expanded software. Also featured are larger, more powerful members of the NM4 processor family that expand memory addressability, provide multi-user operations, and offer a new high-level programming language.

Booth No. 1715
COMPUTER BUSINESS
NEWS
375 Cochituate Road, Route
30, Framingham, MA
01701
(617) 879-0700

The most recent issue of Compu-

ter Business News, the weekly newspaper for integrators and resellers of OEM computer products, will be distributed. Other publications and services offered by CW Communications and Computerworld will be available as well.

Booth No. 1621, 1623, 1625
COMPUTER DECISIONS
A Hayden Publication
50 Essex Street, Rochelle
Park, NJ 07662
(201) 843-0550

A publication directed to business, industry, institutional and government executives who use information/communication systems/data processing systems, including data communications, data collection, data display, information retrieval, word processing and related services.

Booth No. 1601, 1603
COMPUTER DESIGN
11 Goldsmith St., Littleton,
MA 01460
(617) 486-8944

Computer Design magazine.

Booth No. 1447
COMPUTER DEVICES,
INC.
25 North Ave., Burlington,
MA 01803
(617) 273-1550

CDI will be exhibiting its full line of portable data communications Miniterm® terminals and printers, the 20 pound Miniterm PRO portable computer and the popular Q3 thermal printing mechanism. New this year is CDI's totally unique Portable, Programmed Application Terminal concept, available in both low-end (dumb) and high-end (intelligent) terminals. Terminals on display include the Miniterm 1202 Desktop terminal, the Miniterm 1203 Portable and the Miniterm 1204 and 1205, the compact ASR terminals and all Miniterm 1206 portable computer models, including the 1206 with Bar Code Reader and the 1206 with Disk Operating System and floppy disk drives.

Booth No. 2224, 2226
COMPUTER-LINK
CORPORATION
40 Ray Avenue, Burlington,
MA 01803
(617) 272-7400

Computer-Link will display its SORC/800 stand-alone one-step remittance processor terminal, Series 2000 Magnetic Tape Evaluator Cleaner, New Model 1011 Magnetic Tape Cleaner with scanner, New Disc Pack Cleaning and Inspection equipment, and Model 515 Media Degausser.

Booth No. 2612, 2614
COMPUTER POWER
SYSTEMS
3398 East 70th Street, Long
Beach, CA 90805
(213) 630-6361

Computer Power Systems.

Booth No. 1159
COMPUTER
PRODUCTS/COMPUTER
DEALER
464 S. Sunnyvale Ave.,
Sunnyvale, CA 94086
(408) 735-7718

Computer Products is the only product news tabloid serving both the OEM & end user alike. Computer Products' controlled and domestic circulation is 116,000. News of hardware, systems and software featured in a brief digest form makes for quick reading and easy response. Computer Dealer is the only audited publication serving the independent third party marketers of business computers and supplies to business and industry. Computer Dealer's circulation reaches the dealer, distributor and commercial OEM in both the domestic and foreign markets.

Booth No. 1215
COMPUTER
PROFESSIONALS' BOOK
CLUB
McGRAW-HILL BOOK
COMPANY
1221 Avenue of the
Americas, New York, NY
10020
(212) 997-4222

Books of all publishers relating to the computer field.


If you are processing scientific data on a general purpose computer, you need to know about FPS Array Processors.

The unique, efficient instruction set and complementary architecture of FPS Array processor computers are specifically designed to accommodate the vector and matrix algorithms for scientific data processing. High processing speeds result from the seven independent data paths that move operands synchronously to and from the 38-bit floating-point arithmetic units, accumulators, and multiple memories. This inherent simplicity allows FPS Array Processors to be readily emulated on the host or front-end computers for program development. It allows FPS to provide you with a large volume Scientific Math Library (more than 250 functions) and additional volumes for Signal Processing and other special operations. And it allows a FORTRAN Compiler so you can easily create your own special, unique, or proprietary functions.

A typical minicomputer/FPS Array Processor system (such as a PDP 11/34 and AP-120B) provides a computational throughput for scientific and signal processing algorithms that is on the order of two hundred times greater than the throughput of the mini alone.

A large computer/FPS Array Processor system allows heavy data processing, which would severely load the host CPU, to be off-loaded to the AP-190L for efficient processing while the host CPU is utilized for tasks more appropriate to its architecture and operating system.

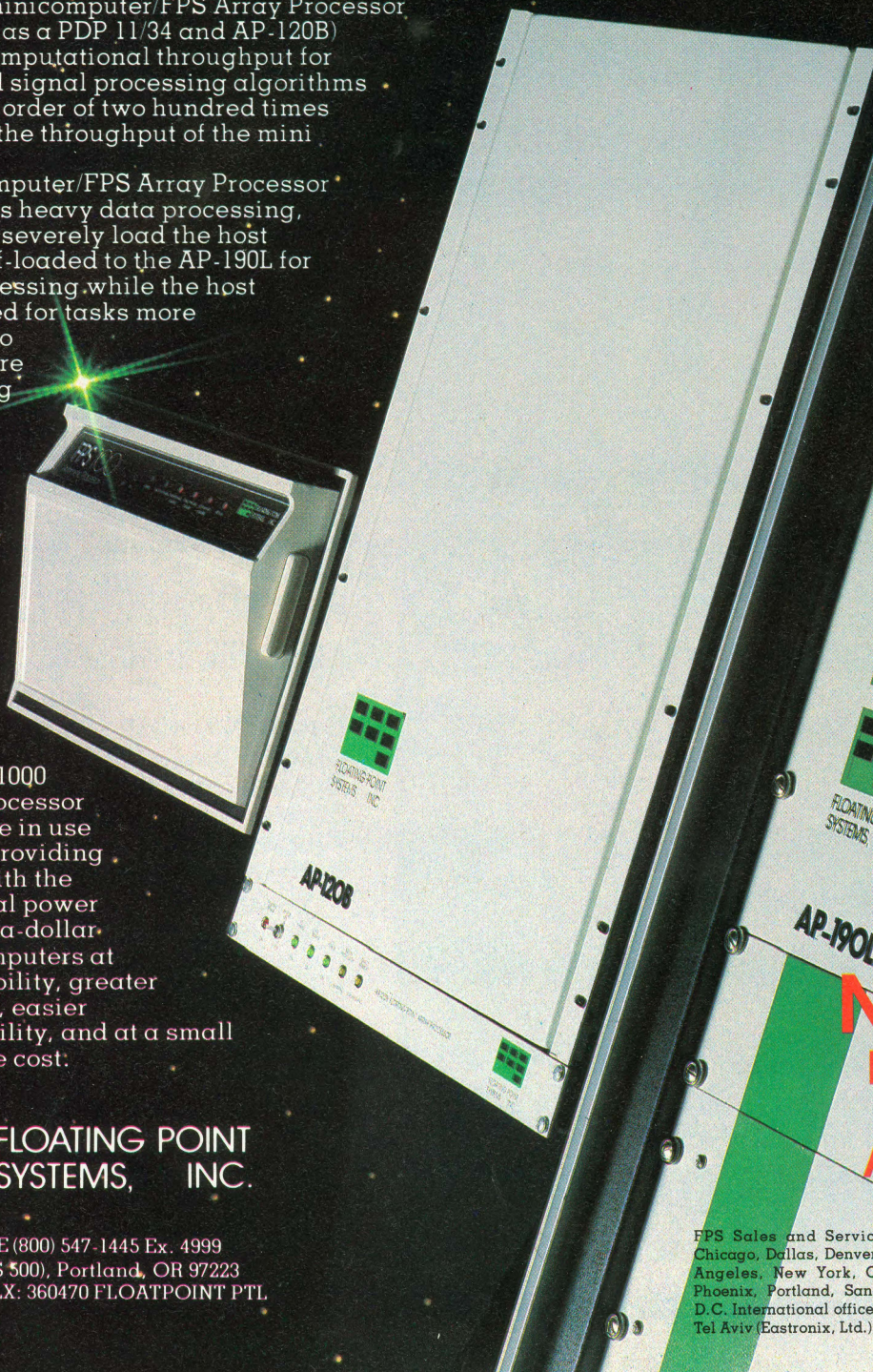
More than 1000 FPS Array Processor computers are in use worldwide, providing their users with the computational power of large, mega-dollar scientific computers at greater reliability, greater applicability, easier programmability, and at a small fraction of the cost:

 **FLOATING POINT
SYSTEMS, INC.**

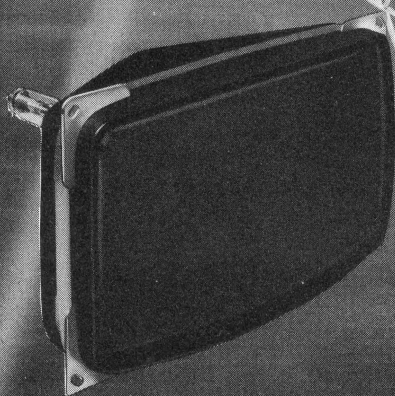
CALL TOLL FREE (800) 547-1445 Ex. 4999
P.O. Box 23489 (S 500), Portland, OR 97223
(503) 641-3151, TLX: 360470 FLOATPOINT PTL

FPS Sales and Service Worldwide: Boston, Calgary, Chicago, Dallas, Denver, Detroit, Houston, Huntsville, Los Angeles, New York, Orlando, Ottawa, Philadelphia, Phoenix, Portland, San Francisco, Toronto, Washington, D.C. International offices: Geneva, London, Munich, Paris, Tel Aviv (Eastronix, Ltd.), Tokyo (Hakuto Co. Ltd.)

See the
New FPS-164
Extended Precision
Large Memory
Attached Processor
NCC Island 2452



DATASTARTM



the bright new answer to data viewing problems, available only from CLINTON... THE ANSWER PEOPLE IN CRT'S. Clinton's new DATASTAR high Contrast Phosphors (available in versions of P-4 and P-31) are the first and only phosphors developed specifically for information display applications.

With Clinton's new DATASTAR high contrast phosphors the operator does not have to adjust the tube to a high brightness level in order to achieve good readability under high ambient light conditions. This also means less spot distortion and delayed screen/phosphor discoloration, common to alpha-numeric displays. In addition, DATASTAR phosphors are significantly more resistant to discoloration, therefore the Clinton CRT has a longer useful field life.

Combine the advantages of DATASTAR phosphors with Clinton's high resolution SUPER-TUBES, and you have a CRT display unequalled in quality and performance. DATASTAR... Just one more innovation from CLINTON... THE ANSWER PEOPLE IN CRT'S. See the DATASTAR phosphors in operation in booth 3206 at the N.C.C.



**CLINTON
ELECTRONICS
CORPORATION**

6701 Clinton Rd., Rockford, Ill. 61111 Phone 815-633-1444 Telex 257-484

**Booth No. 2751, 2753, 2755
COMPUTER ROOMERS,
INC.**

2737 Seelco, Dallas, TX
75235
(214) 357-4671

Modular computer furniture.

**Booth No. 4356
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PRESS, INC.
COMPUTER SCIENCE
EDUCATION EXTENSION
9125 Fall River Lane,
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(301) 299-2040**

Computer Science Press publishes text and reference books in computer science, computer engineering, computer chess and the new quarterly "Journal of Digital Systems." Through its Computer Science Education Extension it offers short courses to computer professionals at their own facilities or in cities throughout the country. These courses are taught by outstanding authorities.

**Booth No. 1842, 1844
COMPUTER
TRANSCIEVER SYSTEMS,
INC.
E 66 Midland Avenue, P.O.
Box 15, Paramus, NJ
07652
(201) 261-6800**

Portable data terminals.

**Booth No. 4019
COMPUTER WEEKLY
Dorset House, Stamford
Street, London SE1 9LU,
England
01261 8033 or 01261 8696**

Come and meet Computer Weekly's editorial and advertising staff and find out about Europe's leading computer journal. Copies will be available free of charge on the stand. Computer Weekly gives you objective European views of the world computer industry from both the suppliers' and users' viewpoint. Computer Weekly is the newspaper computer people rely on.

Booth No. 1715
COMPUTERWORLD
375 Cochituate Road, Route
30, Framingham, MA
01701
(617) 879-0700

The most recent issue of Computerworld, the weekly newspaper for the computer community, will be distributed. Other publications and services offered by CW Communications and Computerworld will be available as well.

Booth No. 4009
'COMPUTING'
HAYMARKET
PUBLISHING LTD.
53-55 Frith Street, London
W1A 2HG, England
01 439 4242

Computing is now the clear leader among UK computing publications — independent research has shown Computing's weekly audited circulation of 90,000 reaches more buyers of data processing equipment. Twice as many data processing and senior managers prefer to read Computing than its weekly rival. Discover how Computing can win your company a bigger share of the UK market — pick up a copy at our stand today and ask about 74 low advertising rates.

Booth No. 4032
COMPUTRON
TECHNOLOGIES
CORPORATION
810 7th Ave., New York,
NY 10019
(212) 246-6990

Truly multi-lingual word processing system which combines the tremendous flexibility and power of CRT word processing input and editing with nearly phototypesetting quality output of Arabic, Greek, English and other languages with equal clarity.

Computron Technologies provides a broad range of products and services in data processing, text processing and telecommunications. Customized and turnkey software is offered for manufacturing, distribution, planning and accounting applications ranging across the entire business spectrum.

DATA-VU™



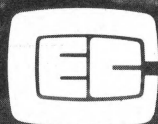
The DATA-VU non-glare CRT pictured on the left as compared to a conventional CRT on the right, represents another significant technological advancement by Clinton Electronics.

Now there is a choice. With Clinton's new DATA-VU, you get the non-glare benefit of an etched panel, but with no significant loss of resolution and at a considerably lower cost.

Consider these advantages before you specify your next CRT.

- DATA-VU provides comparable, non-glare, gloss meter readings when compared with a bonded etched panel.
- DATA-VU is significantly lower in cost than a bonded etched panel.
- DATA-VU is available in all sizes and shapes.
- DATA-VU provides the benefit of non-glare without any significant loss of resolution.
- DATA-VU, when combined with Clinton's exclusive Datastar™ high contrast phosphors, gives an appearance similar to that of an etched panel *without* the loss of light output.

Clinton DATA-VU CRT's and Datastar phosphors . . . more innovation from CLINTON . . . THE ANSWER PEOPLE IN CRT'S. See the DATASTAR phosphors in operation in booth 3206 at the N.C.C.



CLINTON
ELECTRONICS
CORPORATION

6701 Clinton Rd., Rockford, Ill. 61111 Phone 815-633-1444 Telex 257-484

Booth No. 2243
COMTAL CORPORATION
505 W. Woodbury Rd.,
Altadena, CA 91001
(213) 797-1175

Vision One/20 — State-of-the-art image exploitation system. Stand-alone configuration with multiple image, multiple channel capability; can directly address 48 mega-bytes (mega-pixels) of refresh memory, up to 4096x4096-24 bits. Demonstration will include real-time convolution, video input, true color, false color, pseudo-color, monochrome processing.

Digital Video Input Processor — Video digitizing and capture system. Interfaces through digital interface to minicomputers or Vision One/20. Used to increase contrast and signal-to-noise ratio from vidicon camera source.

8000-R Peripheral Image Processing Facility — Attaches to most mini-computer systems to provide sophisticated local image enhancement. Provides display of 512² or 1024² resolution in monochrome or color.

Booth No. 1655
CONRAC
600 N. Rimsdale Avenue,
Covina, CA 97122
(213) 966-3511

Microprocessor-based CRT terminals; color and monochrome displays.

Booth No. 2852, 2854
CONTINENTAL
RESOURCES, INC.
175 Middlesex Turnpike,
Bedford, MA 01730
(617) 275-0850

CR rents, leases, sells and services data communication terminals and computer peripheral equipment.

Booth No. 2440
CONTROL DATA
CORPORATION
8100 34th Avenue South,
Minneapolis, MN 55440
(612) 853-8100

Control Data will feature OEM Peripherals, Business Products and CYBERNET Services.

Booth No. 1627, 1629
CORTRON DIVISION
ILLINOIS TOOL WORKS
INC.
200 W. Grand Ave.,
Elmhurst, IL 60126
(312) 279-9110

Solid-State Keyboards & Key-switches.

Booth No. 1725, 1727
CULLINANE
CORPORATION
20 William Street,
Wellesley, MA 02181
(404) 452-0114 (617) 237-6600

Booth No. 2121, 2123
CURTIS 1000 INC.
1000 Curtis Drive, Smyrna,
GA 30080
(404) 436-6155

Continuous Forms, Mailers, Continuous Letterheads and Envelopes, Expanding Envelopes, Specialty Printing.

Booth No. 4010, 4012
CUSTOM SYSTEMS, INC.
2415 Annapolis Lane,
Minneapolis, MN 55441
(612) 553-1112

Custom Systems, Inc. specializes in the design and manufacture of general I/O and peripheral controller boards for the Data General NOVA & ECLIPSE family of computers.

The Slot Saver series provides multifunction general I/O capability on a single board. Also on display are a full range of controllers for magnetic tape and disk, line printers, card readers and memory. All products are guaranteed fully compatible to standard Data General operating systems.

Booth No. 2750
CYBEREX,
INCORPORATED
7171 Industrial Park Blvd.,
Mentor, OH 44060
(216) 946-1783

1. Uninterruptible Power Systems
2. Power Conditioners
3. 400 Hz Frequency Converters
4. Static Automatic Transfer Switches

Booth No. 4448
DATA ACCESS SYSTEMS,
INC.
Route 42 & Coles Road,
P.O. Box 1230, Blackwood,
NJ 08012
(609) 228-0700

Data Access Systems, Inc., The Data Terminal and Systems People, is one of the nation's largest independent suppliers of data terminals for applications, supplies and service. DASI markets and services equipment from the major U.S. manufacturers as well as its own proprietary products.

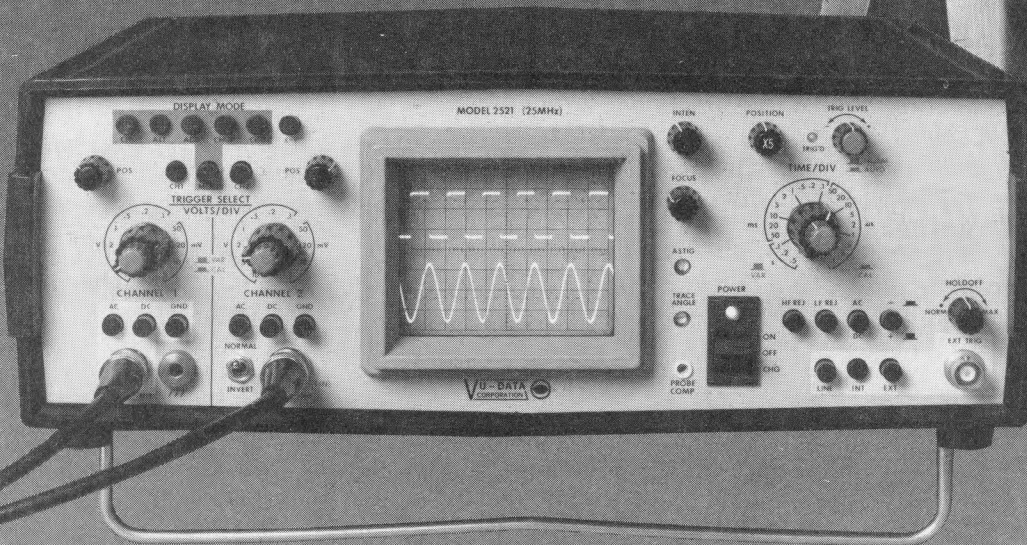
Booth No. 2605, 2607
DATA
COMMUNICATIONS/
McGRAW-HILL
PUBLICATIONS COMPANY
1221 Avenue of the
Americas, New York, NY
10020
(212) 997-3139

DATA COMMUNICATIONS, the only magazine published for data communications professionals, will demonstrate its ability to serve the needs of professional managers and specialists responsible for planning, operating, implementing and selecting equipment for data communications networks and distributed data processing systems. Visitors to their booth can obtain subscriptions plus a complimentary copy of the May issue. Editorial, circulation and sales personnel will be available to answer questions.

Booth No. 3022
DATA DIMENSIONS, INC.
99 River Road, Cos Cob, CT
06807
(203) 622-0500

DDI is a nationwide marketer of intelligent terminals and small/medium size computer systems...manufactured by Durango and Datapoint...Hardware is marketed, along with a network of 11 branch offices. DDI also markets data communications equipment...terminals. Equipment/Software is fully supported by DDI, and maintenance service is available on a nationwide basis.

Give your Field Engineer a hand . . .

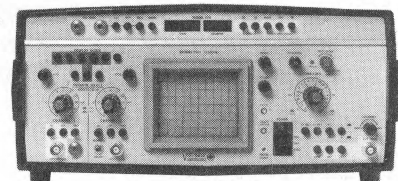


. . . a free hand, with a field sized scope!

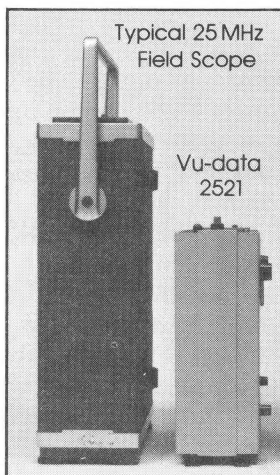
Model 2521 • 25 MHz • 12 lbs. • \$1395.

FIELD SERVICE SCOPES require a unique combination of features, and the 2521 was created specifically for the Field Engineer. Light weight, small size, ruggedness, reliability, simplicity of operation and full measurement capability were all designed in from the start. The trace is bright and sharp. Trigger performance and features are absolutely unequalled by any other scope of the 2521's size/price combination. Note the variable trigger holdoff for stabilizing complex digital signals . . . and a light that shows the presence of a triggered signal even if the trace is off screen.

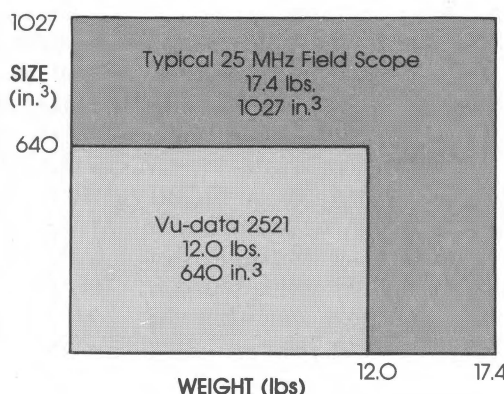
Imagine, from curbside to job site in one trip, with a free hand!



Model 2521 with optional
DMM-Counter \$1795.



Size × Weight = Bulk



INTERESTED? CALL Jon Hall at
(714) 279-6572, or write to us at
7170 Convoy Court, San Diego,
California 92111.

**VU-DATA
CORPORATION**

A LEADER IN PORTABLE OSCILLOSCOPES



Booth No. 2100, 2102
DATA ELECTRONICS, INC.
10150 Sorrento Valley Road,
San Diego, CA 92121
(714) 452-7840

1/4" Cartridge Magnetic Tape
Drives and Streaming Cartridge
Tape Drives for Winchester
Drive Back-up.

Booth No. 1339
DATA GENERAL
CORPORATION
4400 Computer Drive,
Westboro, MA 01580
(617) 366-8911

Data General exhibits computer
systems from each of four product
lines: large data systems, scientific/industrial systems, microproducts, and small business systems. Demonstrations include business, communications, and technical data processing. A complete line of magnetic storage and input/output devices is displayed on the various systems.

Booth No. 4201
DATAGRAPHIX, INC.
P.O. Box 82449, San Diego,
CA 92138
(714) 291-9960

Datagraphix, Inc. will display its
latest information management
systems, including the new Model
9800 laser printer. A variety of
COM recorders will be demonstrated, as well as several microfiche duplicators and readers and reader/printers. The Datagraphix line of 132 column interactive display terminals will also be exhibited.

Booth No. 4120
DATA-MATE, a Product of
The Maine Manufacturing
Company
P.O. Box 408, Nashua, NH
03061
(603) 882-5142

Data-MATE is an integrated product line of computer office furniture. It offers a wide range of terminal stands for use with virtually every printer and CRT. There are also larger terminal desks and work stations with storage and systems integration options. Data-MATE products allow for a

complete turnkey system to be housed in an aesthetic family of matching furniture. Data-MATE is a product of The Maine Manufacturing Company, a leader in the manufacturing of special purpose furniture since 1847.

Booth No. 1407
DATAMATION MAGAZINE
666 Fifth Avenue, 8th Floor,
New York, NY 10019
(212) 489-2583

The DATAMATION staff will distribute complimentary copies of their magazine. Additionally, DATAMATION will make free subscriptions available to those show attendees who qualify to receive the NUMBER ONE monthly publication in the data processing field.

Booth No. 1149
DATAMEDIA
CORPORATION
7300 N. Crescent Blvd.,
Pennsauken, NJ 08110
(609) 665-2382

Datamedia will display the series 80 video display terminals which include a VT-100 compatible unit, 132-column APL, and a new 132-column wide general purpose terminal for OEM's, Systems Houses and End Users.

Booth No. 2808, 2810
DATA MOTION, INC.
199 W. Pearl Road,
Torrington, CT 06790
(203) 482-9485

Form feed tractor devices, paper feed sprockets, line spacing clutch knobs, mechanical drives, tractor option add-on units.

Booth No. 1619
DATA PRINTER CORP
99 Middlesex Street,
Malden, MA 02148
(617) 321-2400

Data Printer Corp, a leading OEM supplier of high-speed horizontal font line printers, with print speeds from 75 to 1500 LPM, will exhibit representative models from our complete family of line printers. We will include a selection from our well known heavy-duty ChainTrain 1200

Series, the pedestal-mounted band line 3000 Series and our newest, fully enclosed acoustical cabinet, 3001 band line Series. Visit Booth No. 1619 and discuss with our sales representatives our full range of products and services.

Booth No. 1741
DATA PROCESSING
MANAGEMENT
ASSOCIATION
505 Busse Highway, Park
Ridge, IL 60068
(312) 825-8124

Data Processing Management Association will be displaying publications, educational materials, seminar and conference information relating to membership.

Booth No. 4331, 4333
DATA PROCESSING
POWER CORP.
12638 Beatrice St., Los
Angeles, CA 90066
(213) 390-8931

The Powermobile™, a computer power center/distribution system, is a completely self-contained system designed for distribution and control of AC source power, to computer &/or peripherals equipment. UL listed, it is compatible with all major lines.

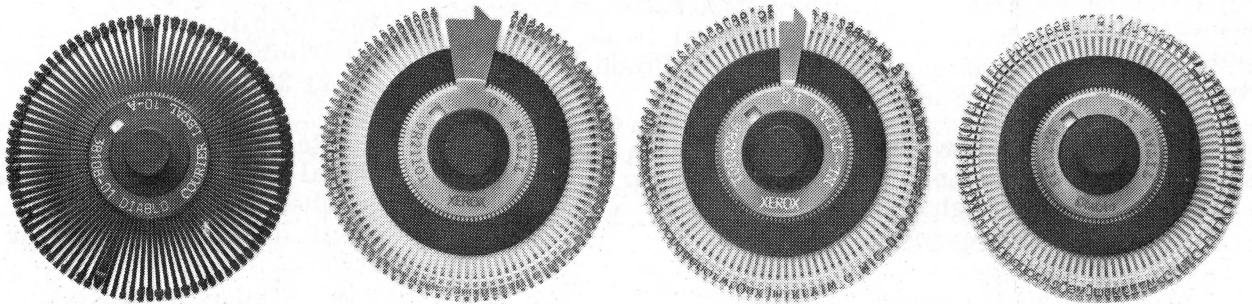
Booth No. 1446, 1448
DATAPRO RESEARCH
CORPORATION
1805 Underwood Boulevard,
Delran, NJ 08075
(609) 764-0100

Datapro Research Corporation, a leading publisher of independent reports, ratings, analyses and news about commercially available information processing systems will feature its entire line of information/reference services which report on EDP mainframes and peripherals, software, mini-computers, data communications, EDP management methods, office systems, word processing, copiers and duplicators, banking automation and retail automation. All are available by annual subscription and may be reviewed for 30 days under Datapro's Trial Subscription Plan.

Diablo introduces the first printer that runs on four wheels.

The Diablo 630 printer is the most versatile printer you can get.

It's the only one that gives you a choice of 4 different interchangeable print wheels and over 100 different type styles.



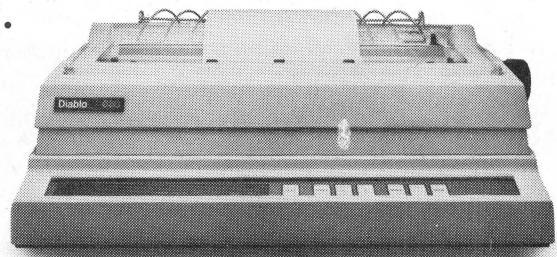
Every 630 works just as well with a 96-character plastic daisy print wheel as it does with an 88, 92, or 96-character metal daisy print wheel.

The 630 also has fewer moving parts than competitive printers, which makes it exceptionally reliable.

This new addition to our line offers unsurpassed print quality. Compatibility with existing Diablo supplies. And automatic bi-directional printing.

The Diablo 630 printer.

Probably the best thing to happen to printing since we re-invented the wheel.



Diablo Systems

Booth No. 2221
DATARAM CORPORATION
Princeton-Hightstown Road,
Cranbury, NJ 08512
(609) 799-0071

Dataram is displaying its wide range of core and semiconductor ADD-ON/ADD-IN memory systems, BULK CORE and BULK SEMI disk emulation systems, and its line of peripheral controllers. PDP-11 and LSI-11 compatible tape, disk, and SMD controllers are being displayed.

Also featured, Dataram's packaged 5-1/4", 7", and 15-3/4" systems in which Dataram combines DEC's popular LSI-11 microcomputer with the various LSI-11 compatible products manufactured by Dataram.

Booth No. 1460, 1462
DATA SPECIALTIES, INC.
3455 Commercial Ave.,
Northbrook, IL 60062
(312) 564-1800

DSI will introduce several new products for the 80's. First is the SRP-750, the intelligent, high

speed, micro-processor based tape reader/punch featuring 3000 baud I/O capabilities, 4K of RAM, auto-self-diagnostics and off-line tape edit capabilities.

Next is the ASR-334, the terminal based reader/punch having 300 baud I/O capabilities while generating, editing and transmitting tapes at high speeds.

Finally, the new tape punch and tape prep systems for the NC/CNC industry.

Come and see DSI's innovations to the world's only "Universal" data communication medium.

Booth No. 2603
DATAWARE, INC.
2565 Elmwood Avenue,
Buffalo, NY 14217
(716) 876-8722 Telex: 91519

Dataware offers to lease or license its conversion software to companies who want to do their own conversion. Product line includes:

RPG/RPG II to COBOL, PL/1 to COBOL, 1400 AUTOCODER/SPS to COBOL, EASYCODER/TRAN to COBOL, FORTRAN to

FORTRAN, BAL/ALC to COBOL, (any) COBOL to (any) COBOL, RPG/RPG II to PL/1, AUTOCODER (7070) to COBOL.

Booth No. 2445
DATUM INC.
1363 S. State College Blvd.,
Anaheim, CA 92806
(714) 533-6333

Peripheral Systems for DEC PDP-11, Data General Nova-3, Interdata and IBM Series/1 Minicomputers. Demonstrations will include tape systems, disk drive, storage module systems and line printer systems. All demonstrations will include Datum embedded and external controllers. Featured will be the Datum D-451 tape drive.

Booth No. 1315, 1317
DECITEK CORP.
129 Flanders Road,
Westboro, MA 01581
(617) 366-8334

Decitek, manufacturer of peripheral equipment will display its punched tape readers as well as its newly introduced 8" floppy disk drives.

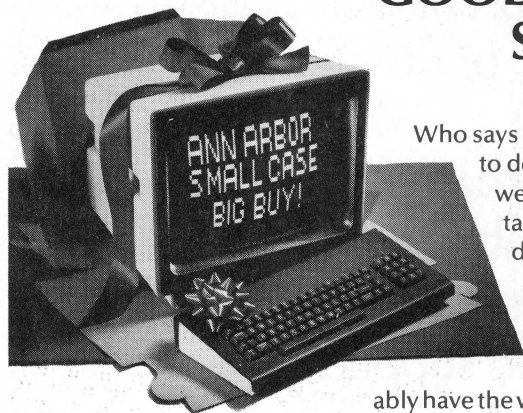
Featured at NCC is a D.C. proportional Reader/Spooler whose reels are directly driven by variable speed D.C. motors, which are microprocessor controlled, eliminating the need for dancer arms to control the motor speed.

Also on display will be Decitek's 8" floppy disk drive with its unique linear stepper motor head positioning system and microprocessor controlled electronics.

Booth No. 4003
DELPA SYSTEMS UK LTD.
56 Chiswick High Road,
London W4, England
01 995 8301

Introducing the Delpa range of Telex and TWX compatible communication systems. The new Delpa range of Telex systems brings together typewriters, word processors, VDU terminals equipment, and the ballpoint pen. With the international Telex network facilitating, fast efficient telecommunications and extreme economy in the preparation of Telex tapes and transmission of the messages.

GOOD CRT'S COME IN SMALL PACKAGES



Who says a CRT terminal has to be big and bulky to do a good job? At Ann Arbor Terminals, we offer a full 15-inch screen and detached keyboard as standard on all our desktop terminals. And the case is only 14" wide by 15" high by 13.6" deep.

We're known throughout the industry for our high quality and reliability. On top of this, we probably

have the widest range of available options in the field. Display formats from 256 to 4800 characters. Foreign language character sets. Special command sets. Custom keyboards. Editing, protected fields and block transmit.

And if your application doesn't lend itself to a desktop terminal, we offer display controllers (especially good in industrial environments) for use with free-standing monitors. Or buy our terminal without the case and mount it in your own console.

So when the CRT is the focal point of your system, why settle for a large case and small screen? You can have excellent readability without taking up a lot of room. And get the features you need. Call us for more information at Ann Arbor Terminals, Inc., 6175 Jackson Road, Ann Arbor, Michigan 48103.

Tel: (313)663-8000. TWX: 810-223-6033.



DILOG CONTROLS DEC 11*

disc and magnetic tape with single quad board controllers for LSI-11*, 11/2, 11/23, and PDP11*. Each reduces your power, space and interface time ... they simply plug into one bus slot of your CPU ... and at a low cost too.

Dilog (Distributed Logic Corp.) is now the **only** firm offering you all these intelligent hard disc and magnetic tape products for your CPU on single quad size boards.

COMMON FEATURES of Dilog products include • single quad size board • no external power or chassis ... just a cable to connect to the drive—you don't need anything else! The low cost simple designs employ proprietary sophisticated bipolar μ Ps so you benefit with • increased reliability • automatic self-test including data base protect feature and indicator.

NEW LSI-11 DUAL DENSITY MAGNETIC TAPE COUPLER, Model DQ130 interfaces dual density (NRZI/PE) imbedded formatter tape drives • handles up to eight drives • emulates TM-11* • handles new drive innovations, such as "streamer" mode • RT-11/RSX-11* compatible • 800 CPI NRZI or 1,600 CPI PE formats • speeds 12.5 to 125 ips • transfers data via DMA facility at rates to 200,000 characters per second • buffers data and status transfers between units.

LSI-11 μ P TAPE CONTROLLER, MODEL DQ120 emulates the TM-11*/TU10* and interfaces industry standard drives including both 7 and 9 tract NRZI 1/2-inch tape drives with 7, 8 1/2 or 10 1/2" reels at speeds up to 112.5 ips.

PDP-11 μ P TAPE CONTROLLER, Model DU120 emulates TM-11*/TU10* and offers you 30-50% saving when used with industry standard drives.

NEW LSI-11SMD/ WINCHESTER/CMD DISC CONTROLLER, Model DQ200 interfaces any two

removable media or Winchester drives with SMD interface • cost savings over 40% and up to 50% savings on power and space • soft sector format offers 20% more disc storage • on-board bootstrap loader provides automatic startup • controls industry standard Winchester, SMD (pack), CMD (cartridge) drives • mix drive types • drive capacities to 300 MB.

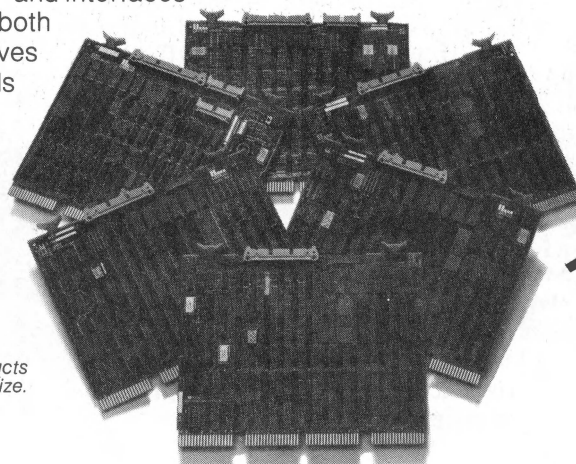
PDP-11 μ P DISC CONTROLLER, Model DU100 is an RK-11*/RK05* emulator that supports all 2.5, 5, 10 and 20 MB industry standard cartridge class disc drives • expanded addressability to 40 MB.

LSI-11 μ P DISC CONTROLLER, Model DQ100 emulates RKV11*/RK05* and offers the same benefits as DU100.

PRICING for Dilog controllers is competitive or lower than any product you'll find on the market ... either individually or in OEM qts. Fast delivery from stock to 30 days A.R.O. and solid warranty.

COMPLETE SYSTEMS including drives also available.

Write or call for detailed product performance data on these 6 Low Power, quad DEC-11 products, or soon to come new products. Distributed Logic Corp. 12800-G Garden Grove Blvd. Garden Grove, CA 92643 Phone (714) 534-8950



All Dilog μ P Products are Low Power, Quad Size.

**DISTRIBUTED
LOGIC CORP.**
DILOG

- LSI-11 Shugart SA4000 Winchester Controller
- PDP-11 Magnetic Tape Coupler
- PDP-11 SMD Controller
- 8" Winchester Controllers

NEW

Top of the range is the new Delpa 1020, a microprocessor based interface controller.

Booth No. 1308, 1310
DELTA DATA SYSTEMS CORPORATION
Woodhaven Industrial Park,
Cornwells Heights, PA
19020
(215) 639-9400

Delta's prestigious Family of Video Display Terminals: 16-bit microprocessor line, for application type processing; features 3 models of terminals plus a terminal development system. The System 700, standard features include up to 21,000 characters of text, text processing, programmable function keys, large character sets (128 to 892 characters), programmable characters, dynamic screen splitting — up to 8 windows on memory; dual processors, BASIC, 1 Meg of storage. 8085 microprocessor based line for data communications. Delta 2830: a pollable synch/asynch terminal emulating the Burroughs TD 830 Series with added value. Delta also emulated Honeywell and Univac.

Booth No. 2643, 2645
DELTEC CORP.
980 Buenos Ave., San
Diego, CA 92110
(714) 275-1331

AC Power Equipment, Super-Isolation Transformers, Line Conditioners and Uninterruptible Power Systems.

Booth No. 1404, 1406
DENNISON KYBE CORPORATION
132 Calvary Street,
Waltham, MA 02154
(617) 899-0012

Magnetic Tape Maintenance Products: SLT-80 — World's only auto-load tape evaluator. TMS-70 — Manual loading tape evaluator. E-24 VI — High throughput tape cleaner. TC-225 — Low cost tape cleaner. Model 8 — Bulk tape eraser. ITC-150 — Instrumentation tape cleaner.

Magnetic Media: KYBE "Accutrack" Products — Cassettes, Flexible disks, Magnetic cards.

Booth No. 1631
DIABLO SYSTEMS INCORPORATED
MS1-101, 24500 Industrial
Blvd., Hayward, CA 94545
(415) 786-5228

Diablo will show its line of plastic and metal wheel printers and terminals which offer the data and word processing user a wide range of printing and communications capabilities and options, including camera-ready print quality. Also shown will be forms and paper handling devices and supplies.

Booth No. 2513, 2515
DIGI-DATA CORPORATION
8580 Dorsey Run Road,
Jessup, MD 20794
(301) 498-0200

Digi-Data Corporation will exhibit its full line of industry compatible synchronous magnetic tape drives with choice of 7", 8 1/2" or 10 1/2" reel size, NRZI, PE or dual format, and speeds from 12 1/2 ips to 75 ips. Available with optional microprocessor based formatter and computer interfaces for the PDP-11, NOVA, EC-LIPSE and HP-21MX.

Digi-Data's new line of compact, 1200 baud, dot matrix printers and printing terminals will also be shown.

Booth No. 1408, 1410
DIGI-LOG SYSTEMS, INC.
Babylon Road, Horsham,
PA 19044
(215) 672-0800

Microcomputer Systems Division. Microterm II. A complete desktop microcomputer system. Features up to 64K bytes of RAM and 1 megabyte of flexible disk. Multi-tasking operating system or CPM. Used in applications such as general small business, client write-up, dental, distributors. With communications support of teletype, 2780/3780, 3275, Telex and TWX.

Network Control Division. Network Supervisory System™ for advanced early warning of network problems and corrective action. Also recently introduced DLM III, a major breakthrough in price/performance for portable or rack mounted video protocol monitors.

Booth No. 1231
DIGITAL COMPUTER CONTROLS
2221 Rosecrans Ave., El
Segundo, CA 90245
(213) 644-3611

Booth No. 4223
DIGITAL EQUIPMENT CORPORATION
129 Parker Street, Maynard,
MA 01754
(617) 493-4361

Digital Equipment Corporation will show our latest computer systems and terminals with on-hand demonstrations.

Booth No. 4431, 4433
DIGITECH DATA INDUSTRIES, INC.
66 Grove Street, Ridgefield,
CT 06877
(203) 438-3731

Booth No. 2464, 2564
DIGITRONICS DIVISION — COMTEC INFORMATION SYSTEMS, INC.
53 John Street,
Cumberland, RI 02864
(401) 724-8500

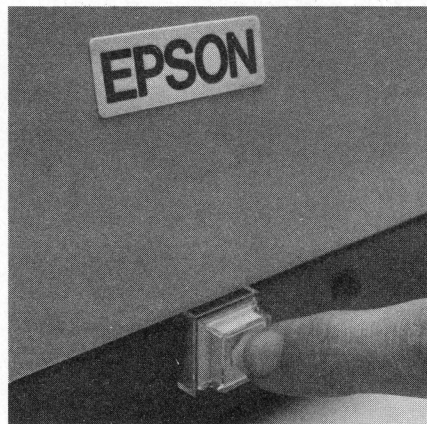
A complete line of paper tape readers, punches and combinations which represent the state-of-the-art in reading and punching mylar tape. All units are available in both rackmounted and table top versions. The table top versions are ideal for the infrequent user.

A complete line of remote batch data entry devices called the Porta-verter. The models shown will be the alpha-numeric, numeric, and hand held versions. Each version is a complete terminal with input keyboard, permanent magnetic storage, hard copy output for audit trails, and telecommunications capability.

Booth No. 3110
DISTRIBUTED LOGIC CORPORATION
12800-G Garden Grove
Blvd, Garden Grove, CA
92643
(714) 534-8950

DEC PDP-11, LSI-11, 11/2, 11/23 plug compatible hard disc and magnetic tape controllers. Hard disc controllers are for cartridge, SMD, and winchester type disc drives. Magnetic tape con-

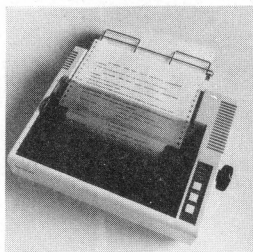
How to spot
the biggest
selling line
of printers
in the world.



Epson.

Not the name you expected? It ought to be. Especially when you consider a few important facts: more than 50% of all the printers in existence—including a staggering 70% of all the print mechanisms in desk calculators—were manufactured by one company. Ours. And every month, Epson turns out hundreds of thousands more.

But here's the most startling fact of all: Epson has sold more printers throughout the world than all the others. Combined. And you can bet we didn't get to be the biggest by putting out inferior quality. Or not having the exact type of printer you need for any application.

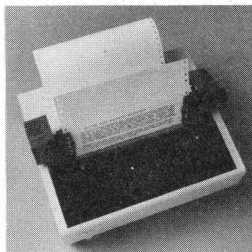


Or backordering units. Or charging an arm and a leg. We got to be the biggest because we have printers you can count on to perform. In an incredible array of dimensions, capacities, configurations and interfaces. We're big because we can deliver what we promise. And because we sell more printers than anybody, we can afford to sell them for a little less. When you're walking

through NCC, be sure to step into booth 2257-63. You'll find us the same way you find our printers.

Under the Epson name.

EPSON
EPSON AMERICA, INC.



Western: 23844 Hawthorne Boulevard, Torrance, California 90505 (213) 378-2220 TWX: 910-344-7390

Eastern: 98 Cutter Mill Road, Rm. 350, Great Neck, New York 11021 (516) 487-0660

trollers are 7/9 track to 1600 bpi density. All controllers are micro-processor based single quad board devices.

Booth No. 4313
DIVA, INC.
607 Industrial Way West,
Eatontown, NJ 07724
(201) 544-9000

Plug card compatible and software transparent low cost mass disc, storage systems for the Digital Equipment Corp., Data General and Interdata minicomputer market. Systems feature emulating controllers with SMD & Winchester Drive sizes of 50 m/bytes to 600 m/bytes. Controllers can be sold separately. Up to 8 drives, mixing & matching, can be connected to each controller.

Booth No. 1531
DOCUMATION
INCORPORATED
P.O. Box 1240 Melbourne,
FL 32901
(305) 725-5520

Visit the Documation Incorporated

ed exhibit and see the finest in Card Equipment and Impact Printer featuring the IMPACT 6912, the newest member of the Documation Printers Family. At Documation, we invite you to compare.

Booth No. 3419
DOSC, INC.
175 I.U. Willets Road,
Albertson, NY 11507
(516) 621-6640

DOSC's TCB-85 Total Computer Board supports CP/M and Pascal. Includes: The 8085A CPU, up to 64K RAM and 16K PROM, Dual Density Floppy Disk interface, CRT controller, Keyboard controller, Serial I/O port, programmable timers, printer interface, DMA controller, Interrupt controller, System Bus Interface. The SVB-80P High resolution prototyping kit contains: SVB-80 Soft video board, MIB-85P Memory Intensive Board with peripheral monitor, and additional Prom routines to exercise the SVB-80. DOSC Boards are Intel Multibus Compatible.

Booth No. 2848, 2850
DOW JONES & COMPANY,
INC.
420 Lexington Avenue, Suite
2540, New York, NY 10017
(212) 285-5314

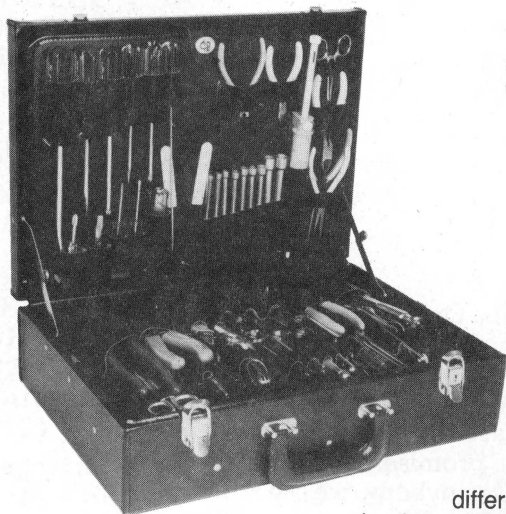
Dow Jones will show a "complete" Business Information Service offering up-to-the-minute business news and 15 minute delayed stock quotes. Info in your home or office on over 6,000 companies available from Dow Jones Plus results of new study of small business systems customers/prospects: what they want to know when buying, familiarity with manufacturers, how they will learn about new products by The Wall Street Journal Research Department.

Booth No. 1318
DRANETZ ENGINEERING
LABORATORIES, INC.
2385 South Clinton Avenue,
South Plainfield, NJ 07080
(201) 755-7080

Dranetz Engineering Laboratories is the pre-eminent manufacturer of power line disturbance analyzers for detecting and recording power line aberrations which can interfere with the proper operation of sensitive electronic data processing equipment. Thousands are in use worldwide for verifying power line quality, for correlating data processing equipment malfunctions with power line disturbances, and for specifying appropriate corrective remedies. Come see our latest state-of-the-art developments for analyzing your electrical power problems!

Booth No. 1419
EASTMAN KODAK CO.
343 State St., Rochester, NY
14650
(716) 724-2562

KOMSTAR Laser Printer prints at 10,000 LPM on microfiche or 16mm roll film. Utilizing reduction ratios of up to 75:1 the KOMSTAR unit prints on-line to IBM and off-line to Univac, NCR, Honeywell, and Burroughs. Optional On/Off Switchable system is also available. The Kodak EK-TAFICHE Duplicator duplicates microfiche at speed up to 1000 copies per hour.



SPECIALIZED PRODUCTS COMPANY TOOL KITS

Booth #4045

If you are tired of waiting weeks for delivery of tool kits or cases needed by your field engineers now — consider us. We stock 17

different tool kits, from an economical little zipper kit to our deluxe field engineer's kit. But most importantly, we deliver. After an order is received by our sales department it is on the way in 48 hours or less and that's a promise! So stop waiting on delivery from our competition and order your next tool kit from Specialized Products Company. For a copy of our all new 1980 catalog, stop by our booth and sign up.

SPECIALIZED  PRODUCTS CO.
 2324 Shorecrest Dr. Dallas, Texas 75235 / (214) 358-4663
 TOLL FREE 800-527-5018

DEC, Data General, H-P communications costs are down

If you're supporting multiple remote terminals on your mini-computer system, whether from DEC, Data General, HP or anyone else, chances are you are paying a fortune in communications costs and probably not even running the terminals as fast as you'd really like to. And to add insult to injury, you have to put up with the occasional phone line 'glitch' which drives your CRT's crazy.

What you really need is a smart little box that will provide error control for your terminals and allow several of them to share one telephone line, contending for the line when they need it, not each paying for a dedicated transmission facility all day.

Well, look no further. MICOM's Micro800 Data Concentrator represents a major breakthrough in low-cost data concentration, sometimes referred to as 'statistical multi-

plexing'. Allowing up to 16 terminals to share a single phone line, it requires absolutely no changes to the hardware and software you have installed today. And prices start as low as \$1150 for a 2-channel unit.

More than 10,000 Micro800's are already in service, installed by the user as painlessly as plugging in a terminal. And with some of our customers supporting four 2400 bps CRT's on a single 2400 bps line, no wonder they're delighted!

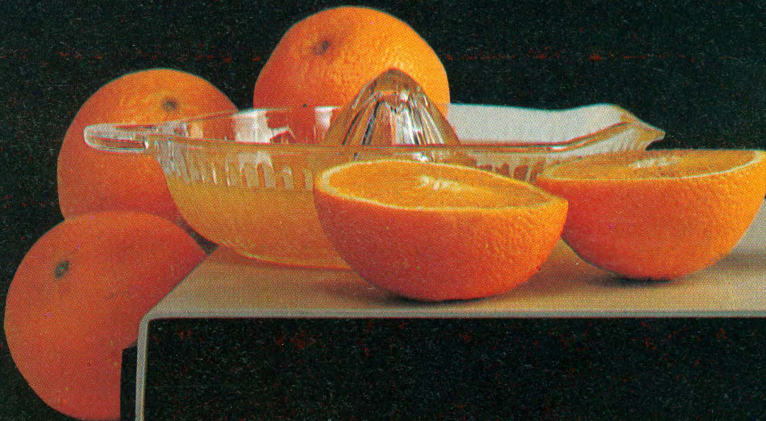
What's more, with the Micro800, transmission errors are gone forever. We even have a single channel configuration for lone terminal installations.

Send for complete details today . . . better still, why not call and order a pair on a 30-day sale-or-return basis. No strings attached! We *know* you'll love it.

**SEE THE NEW
Micro8000
IN OUR BOOTH
AT NCC**

**Still
squeezing
data through
the
old-fashioned
way?**

**Concentrate.
It's cheaper!**



MICOM Micro800
Data Concentrator

MICOM™ MicroComputers for DataCommunications™

MICOM SYSTEMS, INC. • 9551 Irondale Avenue • Chatsworth, California 91311 • Telephone (213) 882-6890 • TWX 910/494-4910
Regional Offices • Atlanta (404) 452-1600 • Boston (617) 235-8870 • Chicago (312) 823-9330
Denver (303) 371-7616 • Philadelphia (609) 267-9665 • Washington, D.C. (703) 241-7803

Available now from these stocking reps . . .

Alabama: (800) 327-6600 • Alaska: (907) 276-5616 • Arizona: (602) 994-5400 • Arkansas: (214) 620-1551 • California: Anaheim (714) 635-7600/Lodi (209) 369-1883
San Diego (714) 578-5760/Santa Clara (408) 249-2491 • Colorado: (303) 371-2422 • Connecticut: (203) 226-4281 • Delaware: (609) 779-0200 • Florida: Coral Springs
(800) 432-4480/Orlando (800) 432-4480 • Georgia: (800) 327-6600 • Hawaii: (808) 261-3751 • Illinois: (312) 255-4820 • Indiana: (317) 846-2591 • Iowa: (402) 895-5850
Kansas: (816) 252-3700 • Kentucky: (317) 846-2591 • Louisiana: (800) 327-6600 • Maine: (617) 235-5520 • Maryland: (301) 261-4344 • Massachusetts: (617) 235-5520
Michigan: (313) 588-2300 • Minnesota: (612) 425-4455 • Mississippi: (800) 327-6600 • Missouri: Independence (816) 252-3700/St. Louis (314) 721-0401 • Montana:
(801) 466-6522 • Nebraska: (402) 895-5850 • Nevada: (714) 635-7600 • New Hampshire: (617) 235-5520 • New Jersey: North (212) 687-2455/South (609) 779-0200
New Mexico: Albuquerque (505) 292-1212/Las Cruces (505) 523-0601 • New York: New York City (212) 687-2455/Rochester (716) 385-3021/Selkirk (518) 439-3070 • North
Carolina: (800) 327-6600 • North Dakota: (612) 425-4455 • Ohio: Cleveland (216) 267-0445/Dayton (513) 434-7500 • Oklahoma: (214) 620-1551 • Oregon:
(503) 224-3145 • Pennsylvania: East (609) 779-0200/West (412) 892-2953 • Rhode Island: (203) 226-4281 • South Carolina: (800) 327-6600 • South Dakota:
(612) 425-4455 • Tennessee: (800) 327-6600 • Texas: Dallas (214) 620-1551/Houston (713) 862-6685 • Utah: (801) 466-6522 • Vermont: (617) 235-5520 • Virginia:
(301) 261-4344 • Washington: (206) 763-2755 • West Virginia: (412) 892-2953 • Wisconsin: (414) 547-6637 • Wyoming: (303) 371-2422

Booth No. 4253, 4255, 4350
EDGE TECHNOLOGY, INC.
1215 S.E. Evon, Portland,
OR 97202
(503) 231-0772

Store and forward devices utilizing mini-floppies and semi-conductor memory. This adds intelligence and storage to a wide variety of popular terminals.

Booth No. 1846, 1848, 1850, 1852
EDUCATIONAL DATA SYSTEMS
1682 Langley Avenue,
Irvine, CA 92714
(714) 556-4242

Tool builders to the minicomputer systems. Suppliers of IRIS operating system, MACS accounting package, Redinet project management system, STYLUS word processing, INFOTRIEVE data base management, Point Four minicomputer and other innovative tools.

Booth No. 1209, 1211
EDUTRONICS/McGRAW-HILL
9300 West 110th St., P.O.
Box 10003, Brookbridge
Branch, Overland Park, KS
66210
(913) 341-3100

Edutronics/McGraw-Hill will be exhibiting an audio-visual training system designed for "in house" use by DP personnel located primarily at medium to large computer sites. The materials encompass the areas of data processing, management and communications skills and are used in training programs for all levels of management and operating personnel in commerce, industry, government agencies and educational institutions.

Booth No. 1161, 1163
EICHNER SYSTEMS, INC.
1460 Industrial Dr., Itasca,
IL 60143
(312) 773-1881

Filing equipment for microfiche and 8" and 5 1/4" diskettes.

Booth No. 1351
ELECTRONIC COMPONENT NEWS
Chilton Way, Radnor, PA
19089
(215) 687-8200

Trade publication.

Booth No. 1807, 1809
ELECTRONIC NEWS/FAIRCHILD PUB.
7 East 12th Street, New
York City, NY 10003
(212) 741-4551

Booth No. 1856, 1858
ELGAR CORPORATION,
AN ONAN POWER
SYSTEMS COMPANY
8225 Mercury Court, San
Diego, CA 92111
(714) 565-1155

Uninterruptible power systems (UPS), high isolation transformers, AC line conditioners, frequency converters, AC power sources, inverters.

Booth No. 3308, 3310
EMERGENCY POWER
ENGINEERING, INC.
3595 Cadillac Avenue, Costa
Mesa, CA 92626
(714) 557-1636

Emergency Power Engineering will be exhibiting our new COMPUTER PROTECTION SYSTEM: a completely self-contained unit which provides total power protection against 99% of all power-related problems and distribution of power to all computer peripherals via flexible cables. New POWERBLOC model rated 30 kva. Other models available up to 50 kva. POWERBLOC provides a solution to all power quality problems: total protection against all power transients; back-up protection of all power outages up to 500 ms (1/2 second); total brown out protection with a regulated output of 1% with millisecond response. Total installed cost is typically 30 - 35% of a UPS system.

Booth No. 2302, 2303
EMERSON ELECTRIC CO.,
INDUSTRIAL CONTROL
DIVISION
3300 S. Standard St., Santa
Ana, CA 92702
(714) 545-5581

Solid-state Uninterruptible Power Systems for 50, 60, and 400 Hz applications, with power ratings from 50 to 4000 kva. These highly reliable systems will protect computers from costly utility power transients, brownouts and blackouts. The 400 Hz UPS will provide a reliable, efficient, and cost effective power source for the large sophisticated computers requiring 400 Hz power.

Booth No. 3415, 3417
EMULEX CORPORATION
2001 Deere Avenue, Santa
Ana, CA 92705
(714) 557-7580

EMULEX adds two more "industry firsts" to its popular line of disk and tape controllers for DEC "11" Series Computers:

Model TC01 — Imbedded single-assembly dual density tape controller for LSI-11's (TU10 compatible).

Model TC70 — Imbedded 6250 bpi tape controller for PDP-11/70 (TU45 compatible). Also on display will be all established products in our current line:

Model SC01 — Large disk controller for LSI-11.

Model SC11 — Large disk controller for PDP-11/04-60.

Model SC70 — Large disk controller for PDP-11/70

Model TC11 — Tape controller for PDP-11.

Booth No. 2812, 2814, 2816, 2818
EPIC DATA
7280 River Road, Richmond,
B.C., Canada V6X 1X5
(604) 273-9146

Examples of applications of the Epic Data line of data collection terminals and controllers will be demonstrated. The compact Epic Data terminals are microprocessor based and include options for reading 80 column cards, punched badges, bar codes and magnetic stripes, displaying data on numeric or alphanumeric displays, entry of data through a customized keyboard plus interfaces for parallel, analog or BCD input and output. A standalone version of the Epic Data terminal incorporating a highly reliable digital cassette drive is also available.

"We switched to NCR," says Joseph A. Dee of Brooks Camera, Inc.

DEE:

Brooks Cameras is the largest photographic dealer in Northern California. And we're growing fast. We just outgrew the processing center that had been doing our computer work. We needed faster turn-around. And we wanted to establish our own priorities.

NCR's SWEENEY:

So you went to your own NCR system.

DEE:

Yes, but not directly. First, we selected a competing vendor's newly announced system. But as we started to plan, we began to see problems ahead. No tape drive. Perhaps no COBOL. Perhaps no match-up with our sales terminals. And all we could get from the supplier were vague assurances that the problems would somehow disappear. So we switched to NCR. Very fortunately, as it turned out, because our NCR system is up and running. While the other vendor is still not delivering the other system.

NCR's SWEENEY:

We are not only delivering, our operating software is fully tested.

DEE:

We had a shirtsleeve session with the NCR software people that was refreshing. They told us exactly where they stood. What we could expect and when. And that's the way it's turning out. They gave us the hard answers.



Joseph A. Dee (left) is president and chairman of Brooks Cameras, Inc. in San Francisco. Jim Sweeney is his NCR Account Manager.

NCR's SWEENEY:

You liked Migration Path Engineering, too.

DEE:

Our requirements are too unique for us to expect off-the-shelf application software from any supplier. We have every kind of sales transaction. We accept all the regular charge cards as well as our own. We have rentals, repairs and layaways. And our own special promotions. So once we made the investment in our own specialized programs, we wanted to protect it. Even when our growth forces

us to move to a larger system. With Migration Path Engineering, NCR can give us that protection.

NCR's SWEENEY:

And finally, you wanted one supplier who would assume responsibility for the entire system from A to Z — including the terminals.

DEE:

You're absolutely right, Jim.

In the NCR office nearest you, there is an account manager like Jim Sweeney who knows both NCR systems and your industry. To learn more about what an NCR system can do for you, phone him at your local office. Or write to EDP Systems, NCR Corporation, Box 606, Dayton, Ohio 45401.



NCR
Complete Computer Systems

Want to increase profits?

Use reliable high quality components...

Equipment reliability ranks #1 in several recent user surveys. Your equipment must be built on a solid foundation of high quality components. You and your customers will profit from the reliability you provide.

For high quality components and delivery you can depend on, contact us.



**HUTCHINSON
INDUSTRIAL
CORPORATION**

30 West Highland Park
Hutchinson, Minnesota 55350
Telephone (612) 587-3797

**SEE US AT NCC BOOTH
#4144**

**Booth No. 4147, 4149
EPICOM, INC.
592 N. Douglas Avenue,
Altamonte Springs, FL
32701
(305) 869-5000**

EPICOM, Inc. will display its family of digital data communications test equipment. On display will be the EPITAPE line recorder, EPIVIEW line monitors, EPI-SOLVER line monitor, EPI-BERT bit error rate tester, and EPIPRINTER thermal printer.

EPICOM, Inc. will introduce its line of tech control equipment, providing access to all lines of a datacomm system. The line encompasses 16-channel VF and digital A-B patching, 25-line break-out panel, per-status and alarm panel; with analytical instruments and analog test modules available.

**Booth No. 2257, 2259, 2261,
2263**

**EPSON AMERICA, INC.
23844 Hawthorne Blvd.,
Torrance, CA 90505
(213) 378-2220**

EPSON will display various types of printers and printer mechanisms including new model for personal computer and data communications systems. Also display Alpha-numeric Liquid Crystal Display Modules.

**Booth No. 1348, 1350
EXIDE ELECTRONICS
2 Penn Center Plaza, P.O.
Box 8109, Philadelphia, PA
19101
(215) 972-8272**

Exide Electronics is one of the few suppliers of a complete line of Uninterruptible Power Systems for Data Processing and Communications, including static 60 Hz and 415 Hz systems. Ratings range from 1-50KW single phase and 30-3000KW three phase, in both non-redundant and redundant configurations.

The Linebacker 250, Exide Electronic's newest addition, is a self-contained total system based on a pulse width modulated transistorized inverter. The new system will provide back-up power

for POS, Process Control, Critical Life Support Systems, Communications, Mini-Computers, Automated Office Systems and other sophisticated loads.

Booth No. 2321
FACIT, INC.
 66 Field Point Road,
 Greenwich, CT 06830
 (203) 622-9150

Facit Data Products Division will exhibit: Tape Readers, Spoolers, Tape Punches and Tape Punch/Reader Combination Units. Further, Facit will introduce and exhibit new Matrix Printers in speed range 100 cps up to 250 cps. Also, included in the exhibit will be the Facit 4208 Tape Cassette Unit.

**Booth No. 2752, 2754, 2756,
 2758, 2760, 2762**

**FAIRCHILD
 SEMICONDUCTOR
 PRODUCTS**
 464 Ellis St., Mountain
 View, CA 94042
 (415) 962-5011

MOS and Bipolar Microcomputers; MOS and Bipolar memories.

Booth No. 2452
**FLOATING POINT
 SYSTEMS, INC.**
 P.O. Box 23489, Portland,
 OR 97223
 3601 S.W. Murray Blvd.,
 Beaverton, Oregon
 (503) 641-3151

Floating Point Systems will display its full line of array processors including the AP-120B, AP-190L, FPS 100, and the new extended precision FPS-164. Demonstrations will feature image processing, speech processing, and The Great Computer Race, that compares the speeds of computers to the fast AP-120B Array Processor. FPS Array Processors attach to most popular minicomputers and mainframes, providing increased computational power and the off-loading of much intensive computations.

THE MICROCOMPUTER WITH BIG SYSTEM SOFTWARE

**Compare the Alpha Micro Computer
 with anything else on the market**

	Alpha Micro	Others
1. Multi-user	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Multi-tasking	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. Multi-processor	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4. Time sharing	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5. Batch processing	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6. Data communications	<input checked="" type="checkbox"/>	<input type="checkbox"/>
7. Up to 1024K memory	<input checked="" type="checkbox"/>	<input type="checkbox"/>
8. Big system peripherals	<input checked="" type="checkbox"/>	<input type="checkbox"/>
• 10, 90, 280 MB hard disks	<input checked="" type="checkbox"/>	<input type="checkbox"/>
• 300, 600, 900 lpm printers	<input checked="" type="checkbox"/>	<input type="checkbox"/>
• 9 track 800/1600 bpi magnetic tape units	<input checked="" type="checkbox"/>	<input type="checkbox"/>
9. Eight-inch Winchester disk (new for NCC)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
10. Dual-sided, double-density floppy disks	<input checked="" type="checkbox"/>	<input type="checkbox"/>
11. Configuration flexibility	<input checked="" type="checkbox"/>	<input type="checkbox"/>
• Up to 2400 MB hard disk storage on a single CPU ...	<input checked="" type="checkbox"/>	<input type="checkbox"/>
• Up to 24 terminals or printers on a single CPU	<input checked="" type="checkbox"/>	<input type="checkbox"/>
12. Configuration expandable by linking CPUs	<input checked="" type="checkbox"/>	<input type="checkbox"/>
13. User-defined memory management	<input checked="" type="checkbox"/>	<input type="checkbox"/>
14. Sequential, ISAM, random access file handling	<input checked="" type="checkbox"/>	<input type="checkbox"/>
15. AlphaBASIC™, AlphaPASCAL™, AlphaLISP™ and assembly languages standard	<input checked="" type="checkbox"/>	<input type="checkbox"/>
16. Word processing/text formatting standard	<input checked="" type="checkbox"/>	<input type="checkbox"/>
17. Multiple printer spooling and over 100 utilities standard	<input checked="" type="checkbox"/>	<input type="checkbox"/>
18. Delivery off-the-shelf for most systems	<input checked="" type="checkbox"/>	<input type="checkbox"/>
19. Hardware and software support and factory training of authorized dealers	<input checked="" type="checkbox"/>	<input type="checkbox"/>
20. Versatility to perform many kinds of business appli- cations (see electronic mail demo at Booth 4021)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
21. Unequalled performance-to-cost ratio	<input checked="" type="checkbox"/>	<input type="checkbox"/>



**No other small business system
 compares with the Alpha Micro Computer.**



17881 Sky Park North
 P. O. Box 18347
 Irvine, California 92713
 (714) 641-0386, TWX 910-595-2666

**COME SEE ALPHIE
 AT BOOTH 4021**

Booth No. 1155, 1157
FLORIDA DATA CORPORATION
3308 New Haven Avenue,
West Melbourne, FL 32901
(305) 724-6088

Manufacturer of high speed serial matrix printers for data processing, graphics and word processing applications. On display will be a 900 CPS listing printer, a color-graphics printer and correspondence quality printer.

Booth No. 1635
FOUR-PHASE SYSTEMS, INC.
MS 42-1B8 10700 North De Anza Blvd., Cupertino, CA 95014
(408) 255-0900

Four-Phase Multifunction Executive™ demonstrations include the total office management systems of data processing, VISION™, and word processing, ForeWord™. VISION combines with ForeWord under the MFE/IV™ umbrella to add local and remote transaction-oriented processing. ForeWord's shared logic software system offers a sophisticated array of features and functions. Data communications between the System IV/90 and Four-Phase's newest processor, the System IV/65, demonstrate concurrent electronic mail and information processing capabilities available to the integrated office of the 80's.

Booth No. 3406, 3408, 3410, 3412, 3414, 3416
FUJITSU LIMITED
6-1 Marunouchi, 2-Chome Chiyoda-Ku, Tokyo, 100 Japan
Tokyo (03) 216-3211

Computer Systems and OEM Products.

In addition, FUJITSU in its entirety will be on Exhibit.

Booth No. 1331
GENERAL AUTOMATION, INC.
1055 South East Street, Anaheim, CA 92805
(714) 778-4800

Mini and micro-computer based

systems for stand-alone and distributed industrial and commercial applications.

Booth No. 1139, 1141, 1143, 1145
GENERAL DATACOMM INDUSTRIES, INC.
One Kennedy Avenue, Danbury, CT 06810
(203) 797-0711

GDC manufactures and markets a comprehensive line of data communications equipment including high, medium and low speed modems, frequency division and time division multiplexers, data line concentrators and network diagnostic and control systems. GDC provides an indepth leasing program and field service support including service of third party equipment.

Booth No. 4031
GENERAL ELECTRIC COMPANY
GE Drive, Waynesboro, VA 22980
(703) 949-1188

TermiNet Line printers matrix controllers and other peripherals.

Booth No. 2143, 2145, 2147, 2149
GENERAL ROBOTICS CORP.
57 North Main St., Hartford, WI 53027
(414) 673-6800

DEC LSI-11 Based Microcomputer Systems. Semi-Systems and components including Floppy Disk Systems, Hard Disk Systems, Solid State Disks, Serial I/O Interfaces, Line Printer Interfaces, Disc Controllers, Systems Chassis, and more. All items are manufactured by General Robotics Corporation and warranted for 120 days. Deliveries are in 30 days.

Booth No. 1107
GENERAL TERMINAL CORPORATION (Formerly Infoton, Inc.)
14831 Franklin, Tustin, CA 92680
(714) 730-0123

GTC will display its smart and

dumb terminal lines as well as introduce new products. Significant enhancements have been added to these products which positions the company as one of the forerunners in the terminal industry. Microprocessor technology coupled with unique packaging designs allow this vendor to meet most application challenges. Versatility in both hardware and software designs should be noted by the prospective purchaser.

Booth No. 2252
GNT AUTOMATIC, INC.
1560 Trapelo Road, Waltham, MA 02154
(617) 890-3305

Paper tape punches, readers, punch mechanisms, and reader punch systems. Special microprocessor based punch systems for code conversion. The GNT Telexmaster system allows telex or TWX tape preparation from standard office typewriters. All punch products are designed for use with 5 to 8 channel paper, mylar or mylar laminate tapes.

Booth No. 2543, 2545
GRAPHIC CONTROLS CORPORATION
COATED PRODUCTS DIVISION
189 Van Rensselaer St., Buffalo, NY 14240
(716) 853-7500

Graphic Controls will exhibit a full line of coated communications papers and toners, used in print/plotters thermal printing terminals and calculators and facsimile machinery.

Booth No. 4440, 4442, 4444
GTE SYLVANIA
700 N. Pratt St., Ottawa, OH 45875
(419) 523-4321

Data display tubes used (black and white and color) in computer terminals and other information display systems.

UPSMANSHIP. Without it, your computer could become a vegetable.



Many computers' memories are a few microseconds from oblivion. With even the briefest power outage, it's lights out for the computer, and for the people depending on the data.

But the right amount of UPSMANSHIP can get any computer through a blackout with all its marbles intact. The right amount? From 0.5 KVA to 45 KVA, depending on your needs.

The same Elgar Uninterruptible Power System (UPS) also protects your computer from life's smaller ups and downs—the momentary spikes and transients on your AC line.

To get UPSMANSHIP, get Elgar on the phone, then get Elgar on the line. 8225 Mercury Ct., San Diego, California 92111. In California, call (714) 565-1155. Out of state, call 800-854-2213 toll free.

Elgar is also a leading producer of High Isolation Transformers, AC Line Conditioners, and AC Power Sources.

ELGAR

an Onan® power systems company

**Get the Answers
at Booth 2603**

**??
CHANGING
COMPUTERS
Brand X ?
? to Brand Y
SOFTWARE
CONVERSION ?**

- RPG/RPG II to COBOL
- RPG/RPG II to PL/1
- AUTOCODER/SPS to COBOL
- EASYCODER/TRAN to COBOL
- BAL/ALC to COBOL
- PL/1 to COBOL
- FORTRAN to FORTRAN
- (any) COBOL to (any) COBOL
- ASSEMBLER to ASSEMBLER



**Get the
Answers
at Booth
2603**

**The conversion software people
Dataware, Inc.**

2565 Elmwood Avenue
Buffalo, New York 14217
(716) 876-8722 • TELEX: 91519

**Booth No. 1665, 1667
GTE-TELENET
COMMUNICATIONS
CORPORATION
8330 Old Courthouse Road,
Suite 400, Vienna, VA
22180
(703) 442-1384**

GTE Telenet will feature private data network systems which serve as a "communications utility" for a broad range of corporate data communications requirements.

GTE Telenet also operates a public data network which provides low cost communications services throughout the US and between the US and 25 foreign countries.

GTE Telenet will introduce its new electronic message system called Telemail.™

**Booth No. 1129, 1131, 1133,
1135
HAMILTON/AVNET
ELECTRONICS
10950 Washington Blvd.,
Culver City, CA 90230
(213) 558-2765**

Centronics Hazeltine Novation
Intel, Motorola, National Semi,
Fairchild digital equipment.

**Booth No. 2635
HARRIS CORPORATION
16001 Dallas Parkway,
Dallas, TX 75240
(214) 386-2537**

**Booth No. 1362
HAVEG INDUSTRIES, INC.
12827 Imperial Hwy., Santa
Fe Springs, CA 90670
(213) 944-3281**

Housings, covers, bases, and cabinetry for Data Processing Equipment.

**Booth No. 2237
HAZELTINE
CORPORATION
Pulaski Rd., Greenlawn, NY
11740
(516) 549-8800**

HAZELTINE CORPORATION will be displaying and demonstrating its latest line of VIDEO DISPLAY TERMINALS.

**Booth No. 3114, 3116
HEI INC.
Jonathan Industrial Center,
Chaska, MN 55318
(612) 448-3510**

Hand-fed Card Readers, Self-contained TTL Compatible Light Pens, Custom and Standard Optical Switches, Hybrid Circuits, Custom Optoelectronic Assemblies, LED and Phototransistor Arrays, Reflective Sensors, Vertical Format Units, and Ribbon Sensors.

**Booth No. 4309
HITACHI AMERICA LTD.
100 California St., #730,
San Francisco, CA 94111
(415) 981-7871**

1. Hitachi Disk Memories: Head per Track Disk, 8-inch disk, Floppy Disk
2. Hitachi Magnetic Tape Systems: 6250 BPI Tape Drive
3. Hitachi Computer: Large Scale CPU
4. Color Display Monitor

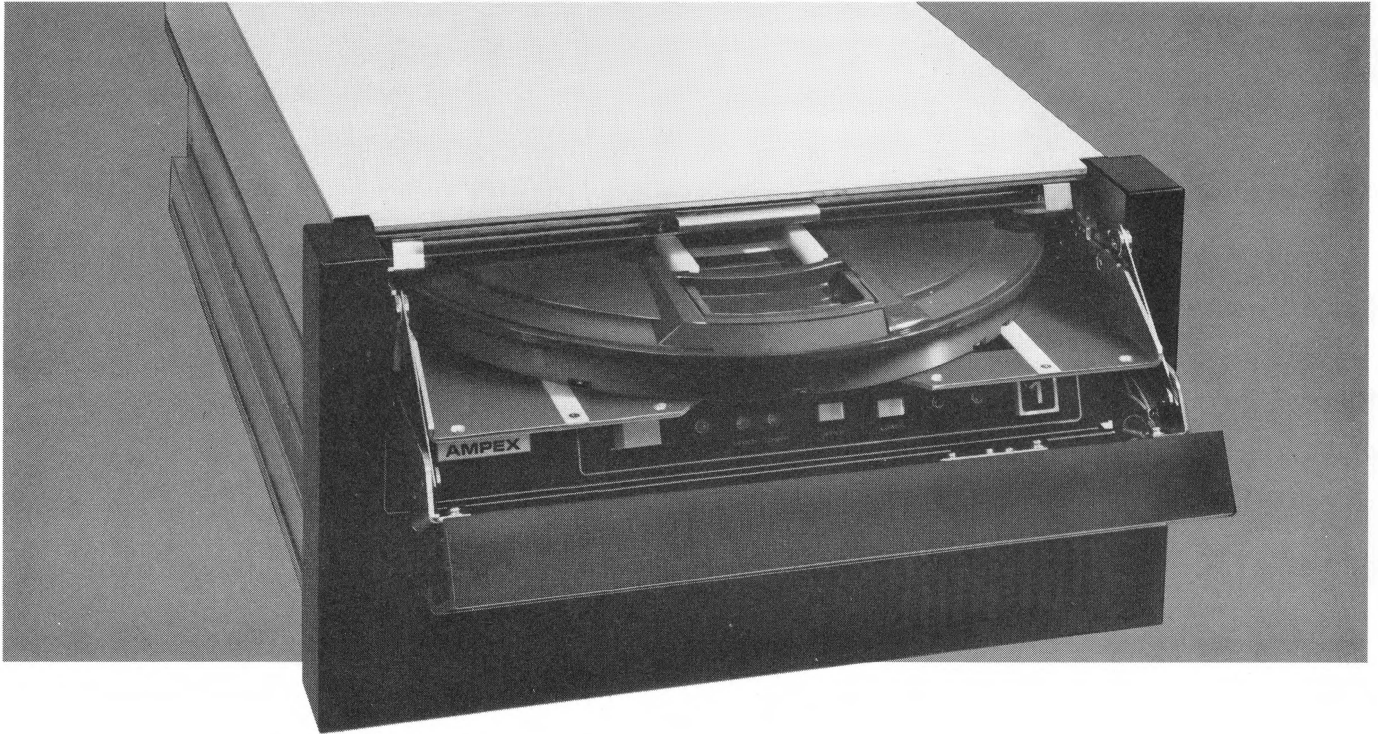
**Booth No. 4237
HONEYWELL
INFORMATION SYSTEMS
200 Smith St., Waltham,
MA 02154
(617) 895-6000**

Honeywell Information Systems will feature a DPS 8-20 system as well as a 6-43 system with appropriate 7801 terminals.

**Booth No. 1539
HOUSTON INSTRUMENT
One Houston Square, 8500
Cameron Rd., Austin, TX
78753
(512) 837-2820**

Houston Instrument will be displaying a complete line of Plotters (Drum and Flatbed), Electrostatic Printers and Plotter/Printers, and Micrographic Digital Plotters and Digitizers. Included in the display will be new products in the Four Pen, High Speed Drum Plotter series.

SUPERWINCHESTER. AMPEX MAKES IT. AND MORE.



How do you make the high reliability and low maintenance of Winchester disk drive technology even more attractive?

You build in a removable 16 megabyte SMD-technology disk cartridge to give the sealed Winchester drive a backup.

Then you give each drive two independent head positioners for faster data transfer speeds than competitive drives. The independent positioners alleviate the need for minor seek adjustments when switching between heads in the fixed and removable media.

You enhance the data throughput by offering an "Independent Seek" option. Independent Seek, unique to Ampex, allows each of the head positioners to seek different tracks simultaneously permitting "overlap seeks". A Superwinchester exclusive. Optimum efficiency.

You include a standard SMD interface that is Control Data CMD plug-compatible and allows easy daisy-chaining of up to 8 drives on existing controllers.

You provide convenient front loading of the 16 megabyte removable cartridge, all in a standard 19-inch rack.

And you also offer a choice of 16, 48, or 80 megabytes of fixed Winchester storage.

You call it the Ampex Superwinchester. (We modestly call it the Ampex DFR-900 series.) And it's only available from Ampex.

Superwinchester. It's just one of the surprising Ampex line of digital systems products you'll see at NCC. Visit Booth 1327 and inspect the full range of Ampex plug-compatible memories, intelligent controllers, minicomputers and mini-computer systems, and the industry's broadest line of digital memories.

If the crowds keep you from asking the questions you need answered, call us at 213-640-0150, or write to Ampex Memory Products, 200 N. Nash St., El Segundo, CA 90245.

AMPEX MAKES IT EASY

**Get the Answers
at Booth 2603**

**\$ \$
CHANGING
COMPUTERS
Brand X \$
\$ to Brand Y \$
SOFTWARE
CONVERSION**

Dataware provides a variety
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2565 Elmwood Avenue
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(716) 876-8722 • TELEX: 91519

**Booth No. 4144, 4146
HUTCHINSON
INDUSTRIAL
CORPORATION
40 West Highland Park,
Hutchinson, MN 55350
(612) 587-3797**

Hutchinson Industrial is a leading manufacturer of precision components for the computer peripheral industry. Its products include key elements for:

1. Memory Systems: disc head suspension springs, laminated recording head cores, core loading plates;
2. Printing Systems: etched font bands, drums, and daisy wheels, electrostatic print heads, parts for laser, xerographic, and matrix printers;
3. Position Control Systems: optical encoder discs, scales, and complete encoder units, reticles and transducers;
4. Electronic Systems: lead frames, flexible and printed circuits.

**Booth No. 2621
IBM CORPORATION
Old Orchard Road, Armonk,
NY 10504
(914) 765-1900**

Demonstrations emphasizing IBM's total systems capability will be offered in the areas of data processing and office systems equipment for distributed processing, communications, word processing and electronic document distribution.

**Booth No. 1730, 1732
IEEE COMPUTER
SOCIETY
(COMPUTER MAGAZINE)
5855 Naples Plaza, #301,
Long Beach, CA 90803
(213) 438-9951**

COMPUTER Magazine; other publications and membership information of the IEEE Computer Society.

**Booth No. 3306
INDUSTRIAL ENGRAVING
CO., INC.
2100 Liberty Street, P.O.
Box 311, Easton, PA
18042
(215) 253-3541**

Print drums, bands, belts, bars, discs for use in computer printers. Print drum assemblies. Chemically milled precision parts.

**Booth No. 3214, 3216
INFORMATION
PROCESSING INC.
1850 Lee Road, Suite 320,
Winter Park, FL 32789
(305) 647-2200**

BLIS/COBOL is an interactive, multiuser, virtual memory operating system with a COBOL compiler. The system uses the NOVA instruction set and includes utilities, a spooler, and communications. The system supports mainframes from Data General, Digidyne, SCI Systems, Ampex, Kernix and over 50 different manufacturers' peripheral devices.

**Booth No. 1757, 1759, 1761,
1763
INFORMER, INC.
8332 Osage Ave., Los
Angeles, CA 90045
(213) 649-2030**

Informer, Inc. will display its small size special terminals. These are used for executives, rack mounted applications, and any space savings requirements. GEAC Computers, Inc. will display its GEAC 8000 multiprocessor system for on-line data base systems with sophisticated communications capabilities. The 8000 has been designed for high transaction loads and is in use in many banks, libraries, pharmacies, and other applications. The 8000 supports X-25 packet-switched networks and many other protocols.

Our industry is changing. We can help you keep pace.

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You can count on our complete line of reference services to deliver the information you need to keep up with the rapid-fire changes that are such a big part of everyday life in our industry.

Continuously-updated AUERBACH services provide current, unbiased coverage of DP equipment, data communications, and office automation. We deliver the information you need on new technologies, new products, and new management techniques.

Use our full range of services to get the information you need to evaluate equipment, choose the products and services that best meet your company's requirements, and make cost-effective daily management decisions.

Our **Computer Technology Reports** give you reliable information on areas ranging from minis to mainframes, from software to plug-compatible peripherals. You get equipment specifications and capabilities, independent evaluations, and up-to-date price reports.

If you're involved in the evaluation and selection of data communications products, you'll be interested in the **DataComm 80** series, a grouping of four separate services, each designed to satisfy a different level of need from small data-entry installations to complex distributed systems.

The **AUERBACH Information Management Series** will help you be an effective manager in a changing EDP world. You'll be pleased to find that one or more of the services in this group is dedicated to helping you make cost-effective decisions in your specific areas of responsibility.

AUERBACH continues to keep up with change by developing new services addressing special information needs. Our newest include **ELECTRONIC OFFICE Management and Technology; Computers In Local Government: Finance and Administration; and Computers In Local Government: Urban and Regional Planning.**

See our complete line of services at Booth 1615



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with change.

6560 North Park Drive, Pennsauken, N.J. 08109

INTRODUCING AT NCC '80: AUERBACH's Total World- Wide Information Network

Something extra special is happening at our NCC booth. We're demonstrating new information media which together with our loose-leaf references make up our Total World-Wide Information Network. Stop by Booth 1615 and check out our instant On-Line Computer Pricing Information and our Telephone Information Service. Come see how we find new ways to help you keep pace with change.

Here's another suggestion: Return the attached coupon, and we'll send you a free gift, a special report titled **New Ways to Reduce DP Costs**. This free gift will suggest some changes you can make yourself...to cut costs and increase efficiency!



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Keep Pace
With Change.

AUERBACH
6560 North Park Drive
Pennsauken, N.J. 08109
(609) 662-2070, Ext. 230

Help me keep pace with change and keep costs down by sending me **New Ways to Reduce DP Costs**.

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**Booth No. 2215
INFOSYSTEMS
MAGAZINE/
HITCHCOCK PUBLISHING
COMPANY**
Hitchcock Building,
Wheaton, IL 60187
(312) 665-1000

INFOSYSTEMS — "One of America's Leading Information Systems Magazine for Management". Circulates over 110,000 copies monthly to EDP decision-makers in business, government and industry.

**Booth No. 1471, 1564
INMAC (International
Minicomputer Accessories
Corporation)**
2465 Augustine Drive, Santa
Clara, CA 95051
(408) 727-1970

A line of accessories and supplies compatible with hardware from DEC, DGC, IBM, HP, TI and others. Includes Magnetic Media, Cables, Connectors, Furniture, Ribbons and more; all guaranteed. Catalog of over 1,000 field-proven products will be available at no charge.

**Booth No. 1753
INNOVATIVE
ELECTRONICS, INC.**
15200 N.W. 60th Avenue,
Miami Lakes, FL 33014
(305) 558-1591

Innovative Electronics Inc. will display data communications equipment, computer peripheral, custom computer interfaces, line printers, and remote teleprinters that includes up to four port protocol converters designed to enable intercommunication of data between two computers or terminals using different line discipline protocols. These protocol converters are fully self contained and allow complete transparency and connection of terminals to most popular IBM, UNIVAC, Honeywell, Burroughs, and NCR computers.

A Series of high speed line printers, up to 500 LPM, using the interchangeable heavy duty chain technology is offered that provide complete compatibility with all

existing host computer or terminal systems. Remote teleprinters are available that operate in both asynchronous and synchronous modes.

**Booth No. 1724, 1726, 1728
INTEGRAL DATA
SYSTEMS, INC.**
14 Tech Circle, Natick MA
01760
(617) 237-7610

Integral Data will display its full line of low cost impact printers including the IDS-440 Paper Tiger dot matrix printer and IP-125 friction feed printer. In addition two new products will be shown, the IDEA-450 high speed impact and the revolutionary IDEA-460 featuring letter equal matrix printing.

**Booth No. 1344, 1346
INTEGRATED SOFTWARE
SYSTEMS CORPORATION
(ISSCO)**
4186 Sorrento Valley Blvd.,
San Diego, CA 92121
(714) 452-0170

Integrated Software Systems Corporation (ISSCO), San Diego, California, will demonstrate DISS-PLA and TELL-A-GRAF, two sophisticated graphics software systems which transform any data into publication-quality 2-D and 3-D charts, graphs, maps, and slides. Marketed internationally, the software is used for formal reports, research analysis, and presentations in a variety of scientific, engineering and business areas.

**Booth No. 1354, 1356, 1358,
1360
INTEL COMMERCIAL
SYSTEMS DIVISION**
P.O. Box 9968, Austin, TX
78766
(512) 258-5171

Intel CSD debuts a family of five Information Resource Management products designed to meet the needs of the end-user marketplace. At the core of the family is an integrated data dictionary, IDD, which serves as the administrator's control and documentation vehicle. Intel's® data base management system, SYSTEM 2000/80®, works synergistically

Why is the DP Manager always the target?



It never fails. Right when your DP system is busiest, one of the company heavies asks you to develop a customized applications package just for him.

He thinks he knows what he wants. He thinks he knows how to describe it to you.

You spend thousands of man-hours trying to translate what he requested into the realities of your system. You use up thousands of dollars of systems time doing it.

But when you finally demonstrate the new applications system to him, he declares it's not what he wants, not what he asked for, and took too long to develop.

Relax. At NCSS we've developed a remarkable new way to speed applications development and better satisfy the end user—without burdening your computer system.

This new method can reduce your development time by as much as two-thirds. And it can save you thousands of dollars in systems time.

If you'd like to learn more, see us at Booths 3315, 3317, 3319.

Know Your Options

National CSS

with IDD to deliver key DBMS facilities: easy-to-use languages such as Quest, PLEX and Report Writer; highly efficient integrity management and comprehensive performance measurement. Visit Intel's booth for details on other product family members.

Booth No. 4231
INTELLIGENT SYSTEMS CORP.
5965 Peachtree Corners E.,
Norcross, GA 30071
(404) 449-5961

Color graphics terminals and desk top computer systems.

Booth No. 4112
INTERCO BUSINESS CONSULTANTS LTD.
14 Petersham Road,
Richmond, Surrey TW10 6UW, England
01 948 3111

Interco, Europe's No. 1 advanced technology agency, with offices in all the major capitals of Europe, provides the full range of marketing and communications services to American, multi-national and indigenous European high-technology companies. At the NCC, Interco will be assisting its UK clients in their efforts to penetrate US markets.

Additionally, with its in-depth knowledge of both advanced technology and the corresponding European markets, it will be looking for US companies seeking to start up or expand their European operations.

Booth No. 1721
INTERDYNE COMPANY
14761 Califa Street, Van Nuys, CA 91411
(213) 787-6800

Magnetic tape peripherals.

Booth No. 2517, 2519
INTERFACE MECHANISMS, INC.
(Intermec)
P.O. Box N, Lynnwood, WA 98036
(206) 743-7036

Bar code data entry terminals. Bar code readers, both fixed and portable, using Intermec's Ruby

Wand light pen; satellite stations for wands remote from readers, multiplexers and tag and label printers for bar codes and up to three lines of text. All popular bar codes are supported.

Booth No. 1737, 1739
INTERNATIONAL DATA CORPORATION
214 Third Ave., Waltham, MA 02154
(617) 890-3700, (404) 452-0114

Booth No. 1657
INTERNATIONAL MATHEMATICAL & STATISTICAL LIBRARIES, INC. (IMSL)
Sixth Floor, NBC Bldg.,
7500 Bellaire Blvd.,
Houston, TX 77036
(713) 772-1927

IMSL features two software products: IMSL Library and TWO-DEPEP. IMSL Library consists of more than 480 mathematical and statistical Fortran subroutines. These high quality subroutines enable programmers to increase productivity and eliminate errors in their scientific and engineering programming efforts.

TWODEPEP is an easy to use finite element program for solving a broad range of general, partial differential equations in two-dimensional regions. TWODEPEP solves highly nonlinear equations as well as parabolic, hyperbolic, elliptic and eigenvalue problems. Its preprocessor eliminates the need for nearly all Fortran input.

Booth No. 2501, 2600, 2601
INTERNATIONAL POWER MACHINES CORPORATION
Box 746, Mesquite, TX 75149
(214) 288-7501

International Power Machines will display 50/60 Hz (12.5 KVA-600 KVA size range) Uninterruptible Power Systems (UPS) and 75 KVA 415 Hz Frequency Converters/UPS. Descriptive brochures, specification literature and application data will also be available.

Booth No. 4027
INTERSTATE ELECTRONICS CORPORATION
P. O. Box 3117, Anaheim, CA 92803
(714) 635-7210

Voice recognition modules and voice data entry systems. Flat-panel plasma displays and display terminals.

Booth No. 2240, 2242, 2244, 2246, 2248, 2250
INTERTEC DATA SYSTEMS CORPORATION
2300 Broad River Road,
Columbia, SC 29210
(803) 798-9100

The 1980 NCC will be used to formally announce a new line of low-cost/high-performance video terminals (see advertisement on back cover). Three new terminals are being displayed including the InterTube III — a smart, editing unit with emulation capabilities and the SuperBrain — a full featured desk-top microcomputer system which sells for under \$3,000. Also on display will be Intertec's new multi-user microcomputer system with hard disk storage capability.

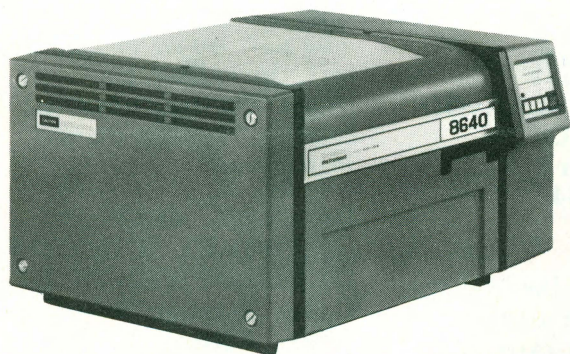
Booth No. 4207
C. ITOH ELECTRONICS, INC.
5301 Beethoven St., Los Angeles, CA 90066
(213) 390-7778

C. Itoh Electronics is displaying CRT Display Monitors, Digital Drum Printer Mechanisms, Dot-Matrix Printer Mechanisms, and Computer peripherals including: Dot-Matrix, Printers, Daisy Wheel Printers and Floppy Disk Drives.

Booth No. 1768, 1770, 1771
JAPAN MARKET CONSULTANTS, DIV. OF ENGINEERS INTERNATIONAL, INC.
660 Scorpio Lane, Foster City, CA 94404
Suite 1106, 7-7-26 Nishi-Shinjuku, Tokyo, Japan 160
(415) 574-4517

New products from Japanese R &

"MOST COMPANIES OFFER YOU A PLOTTER"



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Incremental, Electrostatic or Thermal"

Houston Instrument offers the most complete line of digital plotting and printing devices available ... incremental, electrostatic and thermal. As a result, we can evaluate your specific graphics need and recommend the plotter, printer, or plotter/printer that's tailored to your requirements.

Our **COMPLØT**® incremental plotters are available in 7 different models with X-Y plotter sizes of 8½" X 11" or 11" X 17" and drum plotter chart sizes of 11" to 42". Pen speeds range from 240 to 4000 steps/sec. Prices start as low as \$1,085.*

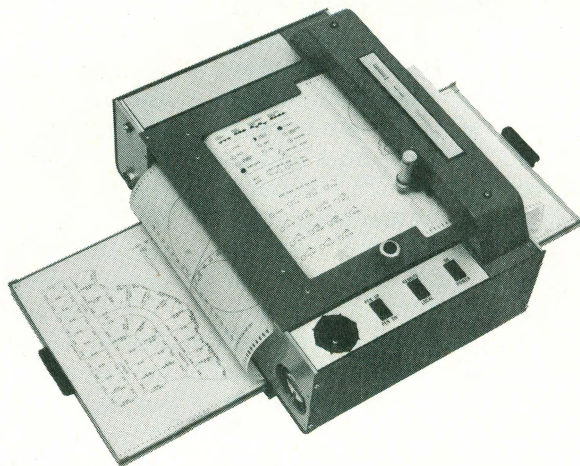
COMPLØT electrostatic plotters and plotter/printers are available with models for printing (2,400 lines per minute on 8½" fan fold paper or 1000 lines per minute on 11" paper); plotting (2" per sec. on 8½" paper or 1.5" per sec. on 11" paper); or simultaneous plotting and printing.

COMPLØT electrostatic CRT copiers provide fast, quality hardcopies from Hewlett Packard Series 2640 terminals or Tektronix® 4010 family terminals at only a few cents per copy. Prices for the Houston Instrument electrostatic products range from \$3,450 to \$5,975.*

The new Model 6000 TISPP Thermal/Intelligent/Strip/Plotter/Printer lets you get quality graphics output from either an analog or digital source and provides the continuity and clarity of a continuous trace with alphanumeric annotations under intelligent control. It's the ideal graphical output device for the new generation of microprocessor controlled instrumentation. Available in one or two pen versions. Prices start at \$1,640.**

So... when you think of graphics, think of HI.

For complete information on any of Houston Instrument's digital plotters, printers, and plotter/printers, contact Houston Instrument, One Houston Square, Austin, Texas 78753. (512) 837-2820. For rush literature requests call toll free (outside Texas) 1-800-531-5205.



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DIVISION OF BAUSCH & LOMB

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D — including microcomputer systems, computer components & peripherals, word processors, MDS equipment, software services. Ask for information regarding sales consulting & trouble-shooting in the Japanese market.

Booth No. 2115
KENNEDY
1600 Shamrock Ave.,
Monrovia, CA 91016
(213) 357-8831

Kennedy, the world's leading manufacturer of digital magnetic tape peripherals, will feature a variety of tape and disk drives. The Model 6809 Data Streamer Tape Transport, designed for Winchester disk backup, will be announced at this show. Other new products will also be featured. The Model 7000 8" Winchester disk drive, with storage up to 20 Mbyte and 7800 formatter; plus the Model 640, a 6400 bpi, 17 Mbytes cartridge drive and 650 formatter.

In addition, a variety of tape transports, ranging in speeds from 12.5 to 125 ips will be exhibited.

Booth No. 2159
KEY TRONIC CORPORATION
P. O. Box 14687, Spokane
WA 99214
(509) 928-8000

Key Tronic will show their new "Military" keyboard along with their Lo Profile, Two-Chip Capacitance Interface boards. Samples of their Reedswitch technology will also be available with various, stepped, sloped and sculptured keytop lines. OCR Readers: MR-10 is a slot optical character recognition peripheral which reads single line "E13B" or "OCRA" at a manual speed between 3-15 inches per second interfacing to host or CRT level via E1A RS232C. MX100 System is an intelligent stand alone OCR batch reader. Multiple fonts, dual line reading and a full library of plug-to-plug compatible interfaces gives the MX100 the flexibility to satisfy any applicational considerations. A dedicated microprocessor insures all data is validated and formatted per systems' requirements.

Booth No. 1400
KNICKERBOCKER CASE CO.
2037 N. Campbell Ave.,
Chicago, IL 60647
(312) 489-4038

Stock and custom designed servicing cases for computer parts, circuit boards, tools and testing equipment for field service engineers, technicians and salesmen.

Booth No. 1627, 1629
LICON DIVISION ILLINOIS TOOL WORKS INC.
6615 W. Irving Park Rd.,
Chicago, IL 60634
(312) 282-4040

Precision Switches — Basic snap-action, Lighted Pushbutton, Pushbutton, Hermetically Sealed, Rotary Ignition, D.I.P., Safety Interlock and Panel-Sealed Pushbuttons.

Booth No. 2400, 2401, 2402, 2404, 2500
LIEBERT CORP.
1050 Dearborn Drive, P.O.
Box 29186 Columbus, OH 43229
(614) 888-0246

Liebert Corporation, world's leading manufacturer of computer room air conditioning, will display their complete product line. From mini computers to mainframes, Liebert systems offer the ultimate in precision and reliability combined with energy conscious operation.

To its subsidiary, Conditioned Power Corporation, Liebert will be displaying a new line of modular, self-contained computer power systems. Highlighted will be the Power Management Center—unique because it is the only total system on the market today, combining power distribution, monitoring, control, and most significantly, 99.5% effective eliminating any power disturbance capable of adversely affecting the computing process.

Booth No. 2125, 2127
LOGABAX S.A.
10889 Wilshire Boulevard,
Suite 1135, Los Angeles, CA 90024
(213) 477-0494

SNA/SDLC Compatible Hard Copy Terminal will be displayed. The new generation of LogAbax terminals, beginning with total compatibility with the SNA/SDLC IMB3767, can provide substantial enhancements, such as User Programmable Keyboards. The new series of LogAbax printers, including the new Champagne Printer, designed for the small computer market, will be introduced.

Booth No. 4102
LYNWOOD SCIENTIFIC DEVELOPMENTS LTD.
Cater Stream Road, Mill Lane, Alton, Hants, England
0420 84888

Alpha powered by Z8001 microprocessor. The Alpha uses a television system operating at nearly twice the normal frequency, therefore high resolution video graphics and enhancements such as italics, underline, UTC, are easily achieved.

Beta to meet increasing evaluation markets. It is an A-Bit microprocessor, full cursor function, video enhancements, underlining, blink, half intensity and editing, reverse delete character and line and word wrap feature, 8 K byte extra memory. CMOS character generator allows customer to design and hold their own character repertoire. Synchronous/asynchronous. SDLC, HDLS interfaced printer out-put supplied as standard.

Booth No. 3000
3M COMPANY
3M Company, 3M Center,
Bldg. 224-5-16, St. Paul, MN 55101
(612) 733-4518

Magnetic Media Suppliers, CRT Filters for Contrast Enhancement, Micrographics and COM (Computer Output Microfilm), Cassette Data Drive Systems and Supplies.

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- DBMS's in hardware
- relational data bases
- future data base networks
- logical data independence
- end-user needs ■ dialogue design
- Third Normal Form and Canonical Synthesis

NETWORKS

- Videotex
- packet switching
- optical fiber systems
- ACS ■ minicomputer networks
- SNA ■ X.25 ■ datagrams ■ SBS
- DNA ■ communication satellites
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James Martin is the computer industry's most widely read author and best attended lecturer. He has written over 20 books on computer/communication technology. He was with IBM for 19 years, and is currently an independent consultant.

HOUSTON

October 20-24, 1980

HONOLULU

November 10-14, 1980

WASHINGTON, D.C.

October 27-31, 1980

BOSTON

November 17-21, 1980

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P.O. BOX 49765, LOS ANGELES, CA. 90049 (213) 476-9747

(213) 476-9747

Booth No. 1450, 1452, 1454
MAGNAVOX DISPLAY
SYSTEMS
1313 Production Road, Fort
Wayne, IN 46808
(219) 482-4411

Orion-go Graphics Display Terminal.

Booth No. 2616, 2618
MAG-TEK, INC.
20725 S. Annalee Avenue,
Carson, CA 90746
(213) 631-8602

Magstripe Card Encoding and Reading Equipment for Computer Security, Time and Attendance, Factory Data Collection, Medical Records, and Credit Card Applications. Encoders and Readers are on display which are compatible with ABA and LATA Credit Card Standards, and IBM 3640 Standards. Also Featuring a Hospital Admission System; activated by a magstripe card which contains 650 Alphanumeric Characters, and is updated with each use.

Booth No. 4323
MANAGEMENT SCIENCE
AMERICA, INC.
3445 Peachtree Road, N. E.,
Suite 1300, Atlanta, GA
30326
(404) 262-2376

MSA is an employee-owned company with over 3,600 clients, in the business of designing, developing, servicing and marketing a complete line of financial software accounting systems. Its product line includes the General Ledger & Financial Reporting, Payroll, Fixed Assets, Accounts Payable, Accounts Receivable, Supplies Inventory Control & Purchasing, Personnel Management & Reporting, and Financial Forecasting & Modeling software systems.

Booth No. 2503, 2505
MATHEMATICA
PRODUCTS GROUP
P.O. Box 2392, Princeton,
NJ 08540
(609) 799-2600

RAMIS II completely integrates an English-like nonprocedural

language and a comprehensive DMBS. It lets DP professionals build complex systems in 1/5 the normal time while permitting management staff to tap corporate databases without putting undue pressure on the DP department.

MPGSWIFT is an economical, general-purpose TP monitor that provides all the functions needed to make the development of on-line TP applications easy and the operation of resulting programs efficient in terms of computer resource use and terminal response time.

Booth No. 2660, 2662
MAXELL CORPORATION
OF AMERICA
60 Oxford Drive,
Moonachie, NJ 07074
(201) 440-8020

Maxell Corporation of America will be exhibiting their full line of 8-inch Floppy Disks, which include single-sided soft and hard and double-sided soft and hard, as well as Mini-Diskettes.

Booth No. 4327, 4329
McCORMACK & DODGE
CORP.
560 Hillside Ave., Needham
Heights, MA 02194
(617) 449-4012

McCormack & Dodge, the quality leader in financial software, offers a full line of accounting packages. Given top ratings in the Datamation/Datapro poll against competitive systems, our packages include a General Ledger/Financial Analysis System, Accounts Payable Information System, Fixed Asset Accounting System, Capital Project Accounting System and Purchase Order Management System.

Project literature will be available and McCormack & Dodge personnel will gladly discuss your accounting needs with you.

Booth No. 1213
McGRAW-HILL BOOK
COMPANY
1221 Avenue of the
Americas, New York, NY
10020
(212) 997-2892

The McGraw-Hill booth features

an exhibit of outstanding Computer Science books including new texts, current revisions, and previously published texts in every field of Computer Science.

Booth No. 2117
MDB SYSTEMS, INC.
1995 N. Batavia St., Orange,
CA 92665
(714) 998-6900

New Computer Interface Products for use with DEC LSI-11 and PDP-11, Data General, Perkin-Elmer, IBM Series/1, and Intel SBC computers. These include Interprocessor Subsystems Links between DEC LSI and PDP computers, enhancements to line printer controller features, and On-Board Programmable PROM Modules for PDP and LSI-11 computers.

Booth No. 1115
MEGATEK CORPORATION
3931 Sorrento Valley Blvd.,
San Diego, CA 92121
(714) 455-5590

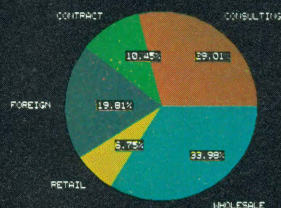
Interactive refresh graphics, 2D and 3D, dynamic, interfaces for most popular computers including EIA RS232, OEM and End-User configurations, Peripherals include tablet digitizer, pen and electrostatic plotters. Also introducing MEGATEK GCS, a computer independent, device independent interactive Fortran graphics system that provides easy to use facilities for the graphics programmer.

Booth No. 2717, 2719
MELCO SALES, INC.,
MITSUBISHI ELECTRIC
CORPORATION
3030 E. Victoria St.,
Compton, CA 90221
(213) 537-7132

High resolution cathode ray tubes and monitors, both color and monochrome, that are manufactured by Mitsubishi Electric Corp., Japan, and distributed by the U.S. marketing subsidiary, Melco Sales, Inc. Deflection yokes, convergence coils, and other CRT related products are also on display and available. Other products not displayed but also available are projection display systems, video

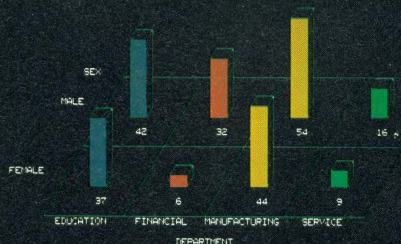
Total Income by Division

PERCENT PIE CHART OF DIVISION



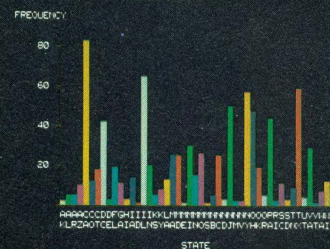
HEALTH PLAN ENROLLMENT

FREQUENCY STACK CHART

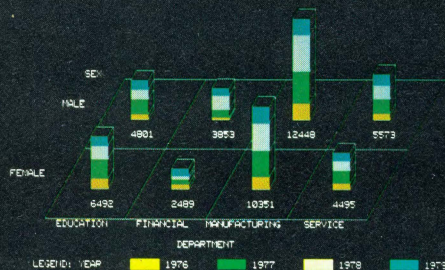


SAS Installations by State

FREQUENCY BAR CHART

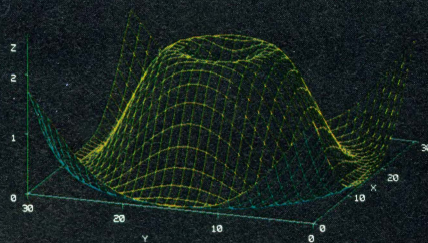


Insurance Benefits Paid



SAS 3-D COLOR GRAPHICS

THE CONBOY HAT



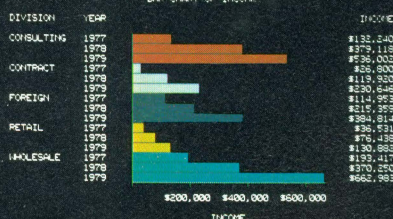
INCOME BY DIVISION

1979

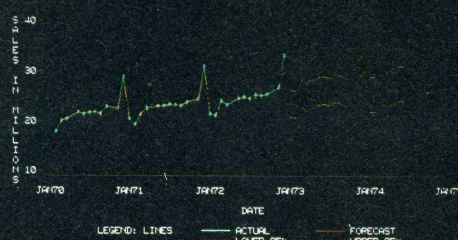


INCOME BY DIVISION

1977 THROUGH 1979

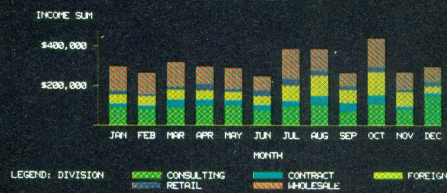


NONDURABLE GOODS FORECAST



INCOME BY DIVISION

1979



SAS saves time - graphically.

Designing software to save time is a SAS tradition. And we've packed our years of experience into a new product. SAS/GRAPH.

SAS/GRAPH pioneers a new direction for graphics software.

Old software systems came into being before hardware had much in the way of time-saving features. And because the software had to do most of the work it was designed to be device-independent.

But SAS/GRAPH is device-intelligent. It's designed to use the time-saving features built into most modern hardware.

For example, look at the blue slice of the pie chart above. SAS/GRAPH used one "pie" command to color it. A device-independent system would require hundreds of "move and draw" commands. With SAS/GRAPH you save computer time and drawing time.

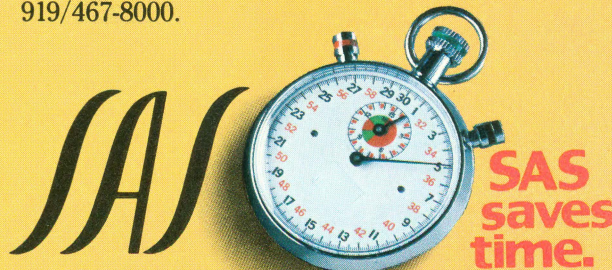
And you'll save user time. Because SAS/GRAPH produces most displays with two or three simple statements.

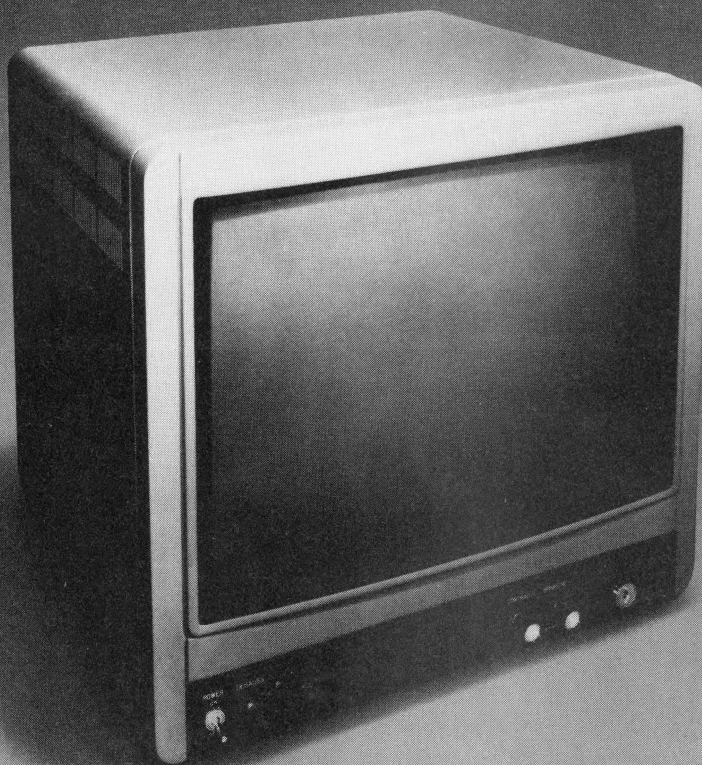
But best of all SAS/GRAPH is integrated into SAS, so you'll get the benefits of the total SAS system — a system now saving time in report writing, statistical analysis, data management and as a higher-level programming language at more than 1,200 OS, OS/VS and VM/CMS sites.

And you can add SAS (including SAS/GRAPH) to your staff for less than half the cost of a new programmer.

Call or write today. We'll provide more information on a very graphic time-saver.

SAS Institute Inc., PO Box 8000, Cary, NC 27511. 919/467-8000.





HITACHI'S NEW IN-LINE GUN RGB COLOR MONITORS ARE SOMETHING TO SEE.

Hitachi helps you see it better with two new high resolution color monitors. Computer data and graphic displays have never been brighter or clearer. Both the HM 2619 and 2613 utilize wide video bandwidth and a 0.31 mm spacing between triad pairs to provide a trio-dot density twice that of conventional models.

On-screen advanced features

These latest Hitachi state-of-the-art monitors embody adjustment-free convergence, single PCB configuration and wide video amplifier bandwidth (from 50 Hz to 25 MHz). The flexible frequencies range from 15 to

18 KHz horizontal and 50 to 60 Hz vertical. The monitors supply high contrast and brightness from black matrix and 85% light transmission tubes.

Behind-the-screen enhancements

Input signals come from RGB video signals with composite sync on green using EIA RS-170 as a guide, or with separate sync signals. Also featured are built-in loopthrough passes for cascading with BNC connectors and a switch selectable impedance for 75 ohms termination of high.

Worry-free operation

Long time convergence

stability is assured due to self convergent in-line guns and single PC board reliability. These unique monitors offer the following operator controls; power on/off, de-gauss, brightness, contrast.

A medium resolution alternative

The model HM 1613 provides economical medium resolution with self convergence and an in-line gun. The dot shadow mask and 0.42 mm dot pitch provide clear viewing under ambient light. The video amplifier bandwidth ranges from 50 Hz to 25 MHz.

Call or write for more information.



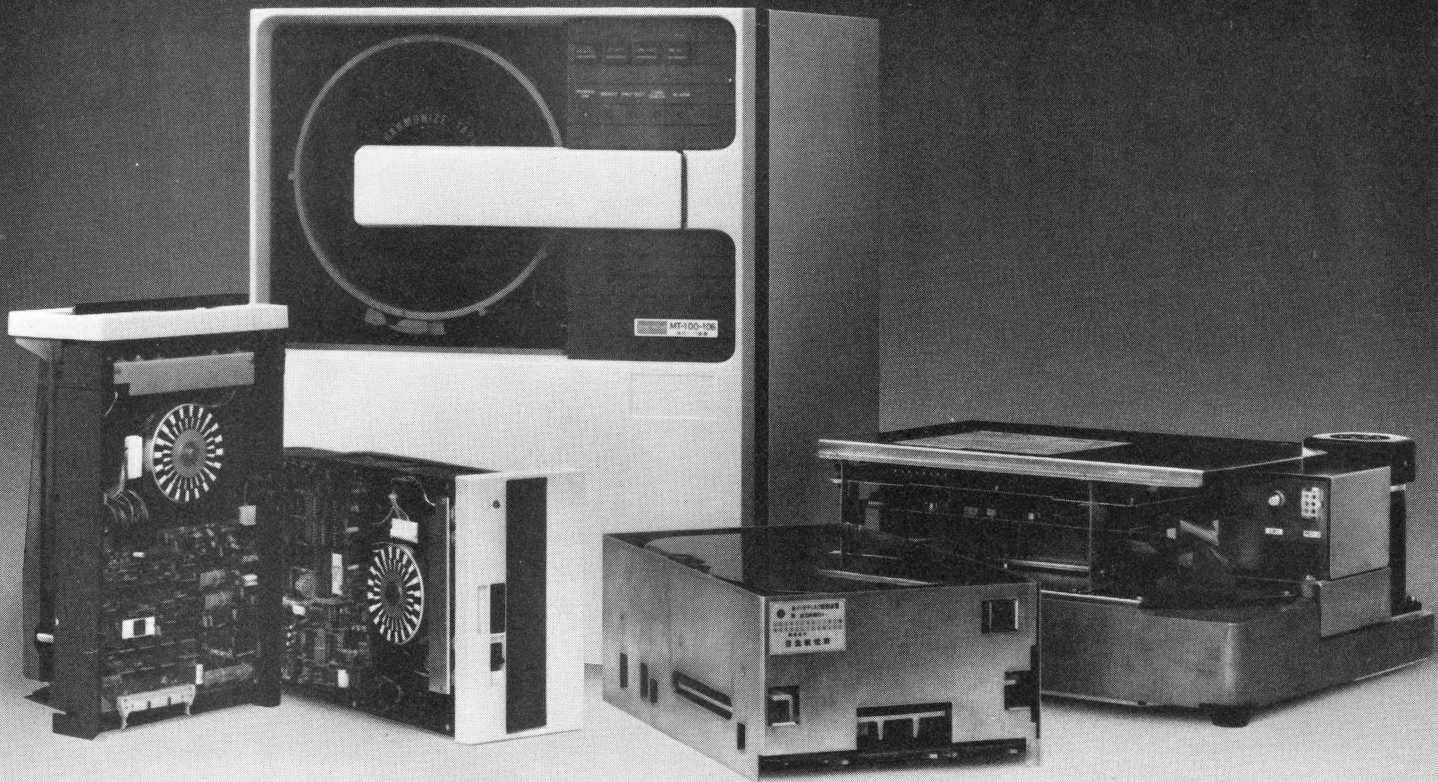
HITACHI

Hitachi, Ltd. Tokyo Japan

Hitachi America, Ltd.
San Francisco Office,

100 California Street, San Francisco, Calif. 94111
Tel: (415) 981-7871

SEE US AT BOOTH 4309



NEW MEMORY PRODUCTS FROM HITACHI THAT'LL REALLY JOG YOUR MEMORY.

Memory devices made by Hitachi provide believable performance in all media including tape, flexible disc and rigid disc drives. Hitachi makes it better for you through the most encompassing quality control standards in the industry. A quarter of a century in manufacturing excellence stand behind Hitachi tape transports and disc drives—25 years of achievement in producing highly reliable mainframes and minicomputers.

The MT 100 tape transport operates at 50/80/125 IPS with recording densities of 800/1600/6250 BPI and transfer rates of 40–781 KB/s. It is rugged, compact

in size and provides the ultimate in read/write fidelity. You can add it on to your system with the sure knowledge that not a bit of memory will be lost due to transport malfunction.

The FDD 403 floppy disc drive provides 1.4 MB capacity with 3 ms access time and a transfer rate of 500 KB/s. Two of the lightweight units (8.9 lbs each) can be mounted on a 19" rack (8.54" x 4.61" x 14.0"). The FDD 403 is powered by a direct drive DC motor eliminating the necessity for an AC power supply or AC changeable belt. A VFO circuit is available for data separation or daisy chain linkage.

The DK 801 disc drive features a sealed 8" disc that is shock mounted and dust-free within a compact cabinet. Available capacity is 6.9 or 13.9 MB with access time of 70 ms (avg.) and a transfer rate of 889 KB/s. Standard components are those used in large disc drives, all governed by custom designed LSI. The DK 801 is maintenance free and provides a recording density of 7,300 BPI.

Whatever the size of your system; you can jog your memory, reliably and effectively, with Hitachi transports and drives. Call or write for more facts.



HITACHI
Hitachi, Ltd. Tokyo Japan

Hitachi America, Ltd.
San Francisco Office,

100 California Street, San Francisco, Calif. 94111
Tel: (415) 981-7871

SEE US AT BOOTH 4309

tape recording equipment and assorted components.

Booth No. 2363

MEMOREX CORPORATION
San Tomas at Central
Expressway, Santa Clara,
CA 95051
(408) 987-1000

Memorex Corporation will focus its presentation on high-quality products for information storage and retrieval. Products featured will include compatible disc storage devices for end-user and OEM applications, disc cache memory and tape storage systems. In addition, computer media products for data processing and business systems applications will be on display.

Booth No. 2231

MFE CORPORATION
Keewaydin Drive, Salem,
NH 03079
(603) 893-1921

MFE CORPORATION will display its full line of computer-related Peripheral Equipment. These products include complete lines of microprocessor based cassette data terminals, eight-inch flexible disk drives, both single and double sided and the full line of cassette tape transport products. MFE, long a world leader in cassette tape transports, will be introducing new products in all three product groups.

**Booth No. 4014, 4016, 4018,
4020**

MICOM SYSTEMS, INC.
9551 Irondale Avenue,
Chatsworth, CA 91311
(213) 882-6890

MICOM SYSTEMS, INC. of Chatsworth, CA, will display its line of intelligent data communications products designed for the minicomputer user; included will be the industry's leading statistical multiplexor, the Micro800 Data Concentrator; Micro200 Port Concentrator; Micro280 Data Logger; Micro300 Line Concentrator; Micro400 Local Dataset; Micro500 Error Controller; Micro600 Port Selector; Micro700 Band Splitter; Micro750 Wideband

Multiplexor; and the Micro900 Multidrop Concentrator.

Booth No. 1236

MICON INDUSTRIES
252 Oak Street, Oakland,
CA 94607
(415) 763-6033

Compact data communication terminals--ASCII code, keyboard/display units with full telephone capabilities built in--Modem, dial, ringing, and automatic answering. Applications include desk-top entry, inter-active computer timesharing, data base access, etc.

**Booth No. 2743, 2745, 2747,
2749**

**MICROCOMPUTER
SYSTEMS CORPORATION**
432 Lakeside Drive,
Sunnyvale, CA 94086
(408) 733-4200

MSC DISK CONTROLLERS:

High performance disk controllers for most computer systems to interface storage modules and "Winchester technology" drives. The latest are the plug compatible, DEC MASSBUS and HP3000 disk storage subsystems. **MISC DISK DRIVES:** MSC's drives include high performance eight inch "Winchester technology" drives. Drives are sold separately or with controllers and back-up tape drives to comprise MSC Intelligent storage systems. **MSC UPC SYMBOL SCANNERS:** MSC Scanner reads UPC labels in a complete Scanner System.

Booth No. 3200

**MICRODATA
CORPORATION**
17481 Red Hill Avenue,
Irvine, CA 92714
(714) 540-6730

Microdata Reality Computer System.

Booth No. 1260, 1262

**MICROPOLIS
CORPORATION**
21329 Nordhoff Street,
Chatsworth, CA 91311
(213) 709-3300

5 1/4" flexible disc drives and

subsystems, 8" Winchester MicroDisk drives, Multi-User operating system for S-100 bus, 8080/Z80 microcomputers using Micropolis MicroDisk subsystems.

Booth No. 1364, 1365
MICRO-TERM, INC.

1413 Hanley Industrial Ct.,
St. Louis, MO 63144
(314) 968-8151

CRT Terminals.

**Booth No. 2602, 2604, 2606,
2608, 2610**

**MINI-COMPUTER
SYSTEMS, INC.**
399 Fairview Park Drive,
Elmsford, NY 10523
(914) 592-8812

MICOS is a major manufacturer of business computer systems called MICOS. MICOS is a compatible family of complete systems ranging in price from under \$30,000 to over \$150,000. The company also sells and supports as individual products for OEMs: CRTs, computer furniture and workstations, and interface electronics.

MICOS systems have received one of the highest possible ratings for user satisfaction in a recent Datapro survey. Features are MTAM communications, APT program generators, REQUEST reporting system and MICAPS application packages.

Booth No. 1305, 1307, 1309
MINI-MICRO

**SYSTEMS/Cahners
Publishers**
221 Columbus Ave., Boston,
MA 02116
(617) 536-7780

Current issues of Mini-Micro Systems, EON and Electronic Business.

Booth No. 4114

MODULAR TECHNOLOGY
P.O. Box 117, Watford,
Herts, WD1 4PD England
01 421 0626

Modular Technology design and manufacture a full and growing range of low cost datacommunications devices. These include Min-

imodems (directly wired or acoustically coupled) for various speeds. Interdrivers (Base Band Modems) Interfibre (a fibre-optic modem for high security applications), a variety of interface adaptors and 'interfacer' an interface diagnosis and patching tool. We can advise on gaining PTT (post office) approvals in Europe and can supply any necessary adaptors for U.S. equipment.

Booth No. 1743, 1745, 1747,
1749, 1751

**MONOLITHIC SYSTEMS
CORP.**

14 Inverness Drive East,
Englewood, CO 80112
(303) 770-7400

Extending the limits of information, Monolithic Systems was the first to design, manufacture and market semiconductor memory systems ten years ago. MSC offers Multibus microcomputers featuring the MSC 8007 and MSC 8009. Additionally, 18 products, from memories to software supporting the full Multibus line. Standard microcomputer system components. Custom semiconductor memories and microcomputer capabilities. Minicomputer memories including DEC add-in/add-on memories and fixed head disk replacement. Commercial and military products for all described above. Installation and service for all products.

Booth No. 2565, 2664, 2666,
2667, 2764

MOSTEK CORPORATION
1215 West Crosby Rd.,
Carrollton, TX 75006
(214) 323-6000

Mostek manufactures a wide array of MOS products. Featured at NCC will be the MD Series of OEM microcomputer boards, and Mostek Memory Systems will show their broad line of DEC, Data General & OEM add-in and add-on memory systems.

FOR A MICRO- LIKE \$2950* YOU GET THE WHOLE 16-BIT SHEBANG!

The new Bytronix series 500 is an entry-level CPU system with access to the full-performance world of super-minis

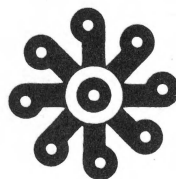
- System contains 16-bit CPU, real-time clock and 64K bytes of MOS memory.
- Controllers for cartridge disc (to 20MB), CRT and printer.
- Packaged within its own video display.
- Teletype I/O port allows addition of second CRT.
- CPU has NOVATM-equivalent instruction set.
- Uses several commercially-available, high-level BASIC or COBOL operating systems

The Series 500 is software-compatible with Bytronix Series 1000, 2000 and 3000 CPU systems.

These packages have CPUs with up to 256K bytes, cartridge disc and storage module controllers, asynchronous communications multiplexers, printer controllers and multi-user operating systems.

* Approx. OEM 100-qty price, unit price \$3980

TM NOVA is a trademark of Data General Corporation



SEND FOR COMPLETE INFORMATION
See the Series 500 in the IPI Booth 3214 at NCC

BYTRONIX

2701 E. Chapman Ave., Fullerton, CA 92631
(714) 871-8763 • Telex 681428



**Booth No. 2228, 2230, 2232,
2234, 2236, 2238**
**MOTOROLA DISPLAY
SYSTEMS**
1301 Algonquin, Room 4420,
Schaumburg, IL 60196
(312) 576-6626

Booth No. 4423, 4425
M.P.I.
9754 Deering, Chatsworth,
CA 91311
(213) 709-4202

Complete family of single & dual
headed mini-floppy disk drives
with capacities from 250kb to
1mb.

**Booth No. 3015, 3017, 3019,
3021**
**NANODATA
CORPORATION**
One Computer Park,
Buffalo, NY 14203
(716) 845-6000

**Booth No. 1255, 1257, 1259,
1261**
**NATIONAL COMPUTER
COMMUNICATIONS
CORPORATION**
260 West Avenue, Box 602,
Stamford, CT 06902
(203) 357-0004

NCC is a distributor of computer
terminals, off-line storage devices,
acoustic couplers, and modems
from the following manufacturers:
Digital Equipment Corp.,
Lear Siegler, Inc. Teletype Corp.,
Diablo Systems, Inc., Techtran
Industries, Inc., Anderson-Jacobson,
and Racal/Vadic.

NCC also offers a turnkey computer
system to small and medium size
businesses. The NCC-8000 micro-
computer is available with software
to perform all accounting functions;
accounts receivable, accounts payable,
general ledger, payroll, and inventory

control, as well as word processing.

Booth No. 3315, 3317, 3319
NATIONAL CSS, INC.
187 Danbury Rd., Wilton,
CT 06897
(203) 762-2511

National CSS 3200 Series Computers
combine time tested hardware,
software and communications
technology to provide a flexible,
powerful vehicle for INTERACTIVE
APPLICATION DEVELOPMENT AND
DELIVERY. NCSS 3200's are 370
compatible and run standalone or
networked. Interactive software
available includes VPS - a user
proven operating system, IBM
language compilers, symbolic
debuggers, NOMAD DBMS and
packet-switched network software.
Comprehensive service and
support provide end-user
documentation and education,
centralized problem diagnosis,
and field software and hardware
support.

Booth No. 2151, 2153
**NATIONAL TECHNICAL
INFORMATION SERVICE**
5285 Port Royal Road,
Springfield, VA 22161
(703) 557-4757

The following computer-related
products and services are available
from National Technical Information
Service (NTIS):

- Bibliographic Data File: summaries
of some 700,000 federally
sponsored research reports.

- Directory of Computer Programs
and Related Technical Reports.

- Directory of Statistical Data
Files.

- Directories of Computer Software
Applications in 25 areas of
specialization.

- An on-line data access program:
gain access to a large number of
time series via an electronic
printer terminal.

- A reference service: locate and
direct machine-readable federal
statistical sources.

- A tabulation service: customized
tabulations of selected Federal
statistical files.

Booth No. 4135
NCR CORPORATION
Main & K Sts., Dayton, OH
45479
(513) 449-3694

NCR Corporation develops, manufactures, markets, installs, and services total business information processing systems for selected worldwide markets; primarily in the retail, financial, commercial, industrial, health care, education and government sectors.

The NCR total systems concept encompasses one of the broadest hardware and software product lines in the industry. NCR computers range from small business systems to the most powerful general-purpose processors, and are supported by a complete spectrum of terminals, peripherals, data communications networks, and an extensive library of software products.

Booth No. 4113
NEC INFORMATION
SYSTEMS, INC.
5 Militia Drive, Lexington,
MA 02173
(617) 862-3120

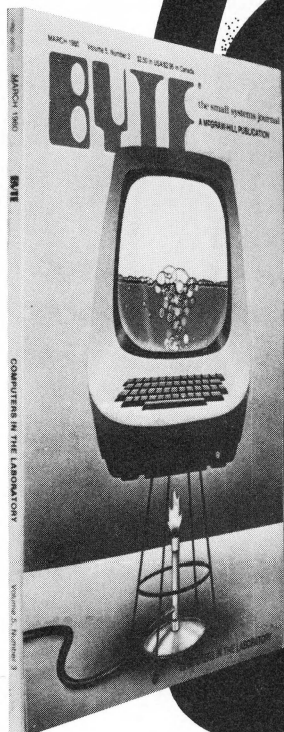
NEC Information Systems, Inc. will feature its Spinwriter™ fully-formed character printers, Trimliner™ high-performance line printers, D1200 Winchester-type disk drives, and Astra small business systems. The Spinwriters are letter quality impact printers which feature the unique NEC "thimble" print element which allows the use of up to 128 characters. The Trimliner printers include both 300 and 600 line-per-minute models with an enhanced print feature which allows the printers to be reduced to speeds of 175 and 350 lines-per-minute respectively. The Astra small business systems are based

on a 16-bit microprocessor designed and developed by NEC and can be configured to accommodate from a single operator station to 32 operator stations. All Astra peripherals are NEC made including disk drives, printers, diskette drives, and operator stations.

Booth No. 4000, 4002, 4004
NETWORK SYSTEMS
CORPORATION
7600 Boone Ave., North,
Brooklyn Park, MN 55428
(612) 425-2202

The NSC HYPERchannel provides a "Universal channel" interconnect capability for host computers, storage subsystems, and I/O subsystems of virtually any manufacture. The HYPERchannel creates a powerful local network of computing resources. The data transmission between system nodes is performed over coaxial

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**Let BYTE and onComputing innovate
you through the 1980's**

© **BYTE PUBLICATIONS, Inc.**, 70 Main St., Peterborough, NH 03458



data trunks operating at 50 million bits per second utilizing advanced bit-serial communication technology. A new product from NSC, the Link Adapter, permits the interconnection of multiple local networks via high speed communications links such as microwave, fiber optic cables, digital phone lines and satellites.

Booth No. 3322, 3324
NEWMAN COMPUTER
EXCH. & COMPUMART
P.O. Box 8610, 1250 N.
Main St., Ann Arbor, MI
48107
(313) 994-3200 Ext. 250

Newman Computer Exchange, Inc. will be represented by both divisions, Mini and Micro. FREE CATALOGS will be distributed. Leasing terms are available.

Newman Computer Exchange, Inc. (Mini Division): Mini computers and peripherals, specializing in DEC and Data General.

NCE CompuMart, Corp. (Micro Division): Heath, Texas Instruments, Hewlett-Packard, Word Processing systems, low cost micro-processor development systems, full line of low cost and full capability micro computers.

PICK UP YOUR FREE CATALOG.

Booth No. 2265, 2267, 2268
NICOLET ZETA
CORPORATION
P.O. Box 4003, 2300
Stanwell Drive, Concord,
CA 94520
(415) 671-0600

Nicolet Zeta will make two new product introductions 1) A high performance 54" wide drum plotter, Model 5453, 2) A compact 11" wide Electrostatic Printer/Plotter Model Z1004. In addition, the Model 1453B, 4-pen Desktop 11" Business Graphics Plotter complete with Interactive Software will be shown. Other popular models on display include the Model 1553 One-pen Desk Top Plotter; and the 6336SX Off-line Mag Tape Plotting.

Booth No. 1467, 1469
NIPPON PERIPHERALS
LIMITED
c/o Nissei Sangyo America
Ltd., 825 Third Avenue,
Room 2620, New York, NY
10022
(212) 758-7020

Nippon Peripherals Ltd. will display NP31 Disk Drive, NP80 Tape Drive and medium Mass Storage System.

Booth No. 4335, 4337, 4339,
4341, 4343, 4345
NIXDORF COMPUTER
CORPORATION
168 Middlesex Turnpike,
Burlington, MA 01803
(617) 273-0480

Distributed processing, word processing, small business computer systems.

Booth No. 2309
NORTHERN TELECOM
SYSTEMS CORPORATION
P.O. Box 1222, Minneapolis,
MN 55440
(612) 932-8000

Northern Telecom Systems Corporation, a single-source supplier of remote data processing and telecommunications equipment, is demonstrating the following product lines: The Model 290 (3270-compatible) on-line system, the Model 405 and 445 distributed data processing systems, the KEYBATCH® high-volume key-to-disk data entry system, and the SL-1 PABX, with its attached data module transmitting data between two Model 445s while concurrently handling voice communications.

Booth No. 1343
NORTRONICS COMPANY,
INC.
8101 Tenth Avenue North,
Minneapolis, MN 55427
(612) 545-0401

To be displayed:

1. 1/2" 6250 BPI GCR tape heads -- 75 ips, 125 ips, 200 ips.
2. .150" cassette, DC Series read-after-write, read/write, and tunnel write heads.
3. Ferrite Floppy Disk heads including 8" and 5-1/4", single and

double-sided, 48 and 100 TPI, tunnel and straddle models.

4. Magnetic credit card heads meeting ABA, Savings Institution, IATA, and EFTS formats.

5. Ledger card and merchandise tag magnetic heads.

6. 1/4" 3M data cartridge, DQ Series read-write and read-after-write heads for data storage, processing, program loading, and streaming up to 16 tracks on 1/4" tape.

7. Thrift and passbook heads.

8. Newest hard coat technologies extending lifetime of digital heads: LTC® (Lifetime Ceramic), chrome, Duracore®, long wear pole pieces.

Booth No. 1249, 1251
NOVA ELECTRIC MFG.
CO.

263 Hillside Avenue, Nutley,
NJ 07110
(201) 661-3434

Uninterruptible Power Systems to provide conditioned, transient-free and continuous power to computer systems. One-quarter cycle transfer switch. 50Hz systems available. Single Phase. Three Phase to 37.5KVA. "New" MICROPower UPS for micro-computers rated 150W & 250W. Subminiature design for O.E.M. applications.

Frequency changers for testing 50Hz systems for export markets.

Booth No. 4034, 4036, 4038,
4040
OHIO SCIENTIFIC INC.
1333 S. Chillicothe Road,
Aurora, OH 44202
(216) 562-5177

Small business systems.

Booth No. 2227
OKIDATA CORPORATION
111 Gaither Drive, Mt.
Laurel, NJ 08054
(609) 235-2600

OKIDATA, a major supplier to the OEM and systems builder will show a complete line of low and medium speed printers. Speeds range from 80 CPS upto 300 LPM. Detailed printer graphics capability will also be demonstrated. A unique document handling printer, ideally suited for



With over 30 years of product innovation and integrity,
Tally just keeps growing, and growing, and growing.

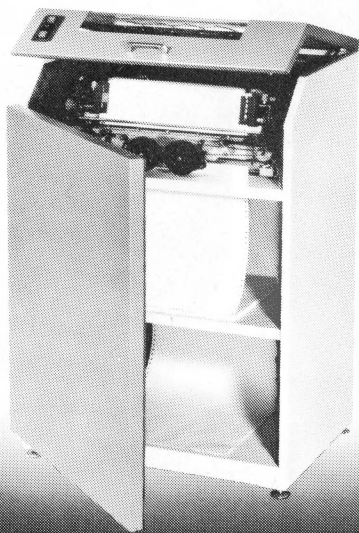
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always improving products.

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Booth #1527



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the most effective,
low-cost method
of reducing
office machine
noise

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Van San Corporation

16735 East Johnson Drive
City of Industry, CA 91745
(213) 961-7211 • Telex 67-0320

cut from or banking application will be on display. OKIDATA, a pioneer in Winchester technology, will also show its highly successful and field proven disc line.

Booth No. 3006
ONTEL CORPORATION
250 Crossways Park Drive,
Woodbury, NY 11797
(516) 364-2121

Ontel presents its full line of User Programmable Intelligent Terminal Systems designed for both Data Processing and Word Processing applications. Products ranging from the low-cost OP-1/R remote processor to the OP-1/70 and OP-1/50 Intelligent Terminals are displayed in a variety of stand-alone and clustered configurations; featured is the introduction of the OP-1/15, a new generation of Intelligent Systems with advanced styling and performance.

Booth No. 1239
PANASONIC COMPANY
One Panasonic Way,
Secaucus, NJ 07094
(201) 348-7170

Data Communications Group: Data Collection Terminal (DET) and small business computer featuring the JD 800 General Purpose Computer; BD 5000 a unique single key stroke key board computer; DET on line time and attendance terminal.

CRT Display Group: Monochrome CRT display, data grade series, high resolution series; High resolution Color CRT display; Display monitors

ECD Group: Cathode ray tubes high resolution color and monochrome CRT's. On display: 25" color CRT, 13" In Line and Delta Gun CRT, Projection CRT 9", 12", 15" monochrome CRT with Direct Etch screen.

**Booth No. 1756, 1758, 1760,
1762**
PARADYNE CORPORATION
8550 Ulmerton Road, Largo,
FL 33541
(813) 536-4771

Booth No. 4100
PERICOM DATA SYSTEMS
See British Trade Development
Office Listing.

Booth No. 2547, 2549
PERIPHERAL DYNAMICS INC.
1850 Gravers Road,
Plymouth Twp., Norristown,
PA 19401
(215) 277-8484

Automatic Card Readers-Punched Hole and Mark Sense-150 through 1000 cards-per-minute. Manual Fed Card Readers-Punched Hole and Mark Sense. Time & Attendance Terminals. Card/Badge Readers and Badge Readers. Data Communication Interfaces. Work Data Collection Input Equipment.

Booth No. 2434
PERKIN-ELMER
2 Crescent Place,
Oceanport, NJ 07757
(201) 229-6800

Perkin-Elmer's large exhibit will include products from its Computer Systems Division, Terminals Division, and Memory Products Division. Exhibited will be its new Series 3200 family of 32-bit minicomputers, its recently announced Series Sixteen family of 16-bit systems, new 32-bit software, and a wide range of peripherals.

Booth No. 1363
PERSCI, INC.
12210 Nebraska Ave., W.
Los Angeles, CA 90025
(213) 820-7613

Two new models of PerSci dual 8" two-sided floppy disc drives.

Booth No. 2335
PERTEC COMPUTER CORPORATION
21111 Erwin St., Woodland Hills, CA 91367
(213) 999-2020

Small business computer systems, distributes processing systems, mini computer peripherals (tape & disc drives) & service support for all PCC products.

Booth No. 3222
PHILIPS TEST & MEASURING INSTRUMENTS, INC.
85 McKee Drive, Mahwah,
NJ 07430
(201) 529-3800

Oscilloscopes, Logic Analyzers,
Counters/Timers, Pulse Generators.

Booth No. 4007
PLESSEY MICROSYSTEMS LTD.
Water Lane, Towcester,
Northants, England
0327 50312

Miproc 16, compact microcomputer with phenomenal cost/performance ratio, and processing speed up to 4 million per second. It has a data transfer rate up to 10 megawords/sec and ability to handle text changes in less than 2 microseconds.

Perfect for systems building, re-

liability and continuity, also for ruggedized and military equipments.

New range of Plessey Microsystems bubble memory systems successfully launched in 1979.

Booth No. 3118, 3120, 3122
PLESSEY PERIPHERAL SYSTEMS
1691 Browning Ave., Irvine,
CA 92714
(714) 557-9811

Plessey Peripheral Systems, one of the largest independent suppliers of DEC and other minicomputer compatible equipment exhibits newly released products along with complete PDP-11 mini and LSI-11/23 micro computer systems. Plessey's product line includes add-in/ add-on core and semiconductor memories; cartridge disc, floppy disc, disc pack, and magnetic tape systems; complete computer based systems; op-

erating systems and diagnostic software; character printers; and a wide variety of backplanes, expansion chassis, and other accessories.

Booth No. 2856, 2858, 2860, 2862
POINT 4 DATA CORPORATION, formerly Educational Data Systems
2659 McCabe Way, Irvine,
CA 92714
(714) 556-4242

POINT 4 Data Corporation will be demonstrating its powerful new POINT 4 minicomputer linked via the Mighty Mux multiplexer to a series of terminals. Operating on these terminals will be interactive displays of the popular IRIS Operating System, the Management, Accounting and Control System (MACS) general business packages and several specialized applications packages for Word Processing, Data Base Manage-

DOSC Introduces

THE MOST POWERFUL MICROCOMPUTER AVAILABLE TODAY!

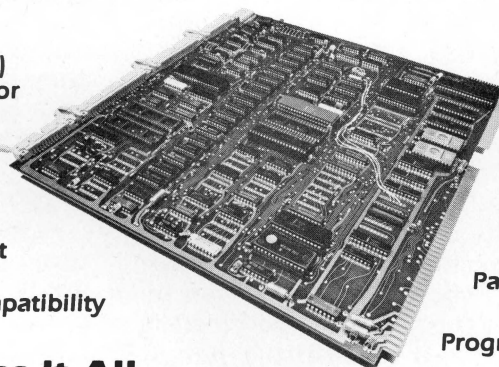
SEE US AT NCC Booth #3419

48K RAM (64K optional)
with sockets available for
up to 16K PROM

Strobed or Scanned
Keyboard Interface

Serial I/O Port

Intel Multibus™ Compatibility



**TCB-85/
Total Computer Board**

Dual-Density/Double-Sided
Floppy Disk Controller

Programmable CRT Controller

Parallel Printer Interface

Programmable Interrupt Controller

One Board Does It All . . .

Complete as a stand-alone or used with Intel's Multibus™, the TCB-85 combines outstanding performance and reliability with an impressive variety of features. . . all in one compact, low priced package.

In addition to an extremely powerful I/O capability and high level of integration, the TCB-85 is capable of supporting CP/M and PASCAL with DOSC PROMs.

The TCB-85 uses the Intel 8085A CPU and can optionally be ordered with the Intel 8085A-2/10 MHz CPU.

TM Trademark Intel Corporation

Evaluation units are now available for immediate delivery and priced at just \$1275 in quantities of 100.

Get All the Details Now!
Contact Alex Newman at (516) 621-6640

DOSC
OEM PRODUCTS DIVISION
175 I.U. Willets Road, Albertson, NY 11507

ment and Project Control. Also available will be information on the Micro-N microprogrammable processor and new disk controllers available through POINT 4 Data Corporation.

Booth No. 4430, 4432, 4434
POLYMORPHIC SYSTEMS
460 Ward Drive, Santa
Barbara, CA 93111
(805) 967-2351

Two user 8813 business computer with BEMS - network systems - hard disk - & 8810 Wordprocessor.

Booth No. 1254, 1256
PRACTICAL
AUTOMATION
Trap Falls Rd., Shelton, CT
06484
(203) 929-5381

Dot matrix Tape printers.

Booth No. 1263
PRECISION HANDLING
DEVICES, INC.
63 South Main Street,
Assonet, MA 02702
(617) 644-5282

Introducing, for daisy wheel and Teletype Model 43 type printers, significantly enhanced paper handling with two new forms tractors (patents pending).

TWIN tractors for daisy wheel printers feature easy top loading for operator convenience and tension control for perfect printout of plotted curves, special characters, forms, and shapes.

Users of Teletype Model 43 can now use a wide variety of forms, (including pre-printed) through simple field retrofit of T43 forms tractors to their printers.

Booth No. 4443, 4445
PRENTICE CORPORATION
266 Caspian Dr., Sunnyvale,
CA 94086
(415) 494-7225

Prentice will display its line of Bell compatible modems, short haul modems and statistical multiplexers, including the new microprocessor based quad modem. The quad modem is on-line compatible with the Bell 212A and 103 and Vadic's 3400 series and

the CCITT V.22 type.

Booth No. 1402, 1403, 1405
PRENTICE-HALL, INC.
College Exhibits, Englewood
Cliffs, NJ 07632
(201) 592-2377

College Textbooks & Reference Books.

Booth No. 2353
PRIME COMPUTER, INC.
145 Pennsylvania Ave.,
Framingham, MA 02146
(617) 879-2960

Minicomputers.

Booth No. 1319
PRINCETON ELECTRONIC
PRODUCTS
P.O. Box 101, North
Brunswick, NJ 08902
(201) 297-4448

Computer graphic systems.

Booth No. 1312, 1314, 1316
PRINTRONIX, INC.
P.O. Box 19559, 17421
Derian Ave., Irvine, CA
92713
(714) 549-8272

Printronic is displaying its full range of medium-speed impact printers (150, 300, and 600 lines per minute). Designed for quality and high reliability, these line matrix printers feature 96-character ASCII sets, expandable to 160 characters, and provide unlimited font versatility. Printronix will demonstrate the unequalled print quality from all three models, copy after copy, even on six-part forms. The full plotting and graphics capability inherent in Printronix printers will also be shown.

Booth No. 2708, 2710, 2712,
2714, 2716, 2718
QANTEL CORPORATION
3525 Breakwater Ave.,
Hayward, CA 94545
(415) 783-3410

Interactive Business computer systems, accommodating from one to 64 users, with a full range of applications software.

Booth No. 1647
QANTEX
60 Plant Avenue,
Hauppauge, NY 11787
(516) 582-6060

Digital Cartridge Driver Tape Storage Systems, Printers.

Booth No. 4035
QUANTOR
520 Logue Avenue,
Mountain View, CA 94043
(415) 965-3700

COM Recorders, duplicators, readers, Reader-Printers and other micrographic equipment.

Booth No. 4001
QUEST AUTOMATION
LTD.
c/o Micropad Ltd., 575
Madison Avenue, New York,
NY 10022
(212) 486-0282

On show for the first time in the USA will be the new hand print data entry terminal, Micropad.

This is a local or remote unit enabling hand written alpha-data to be captured by a host computer at time of writing. Data is written with a ball point pen or pencil on user defined documents placed on a pressure sensitive writing surface. Characters are recognized by an on-board microcomputer as they are written and converted to standard ASCII for transmission to the host, together with positioned information. RX 232 and Loop interfaces are provided.

A built-in display confirms entered characters. OEM markets are being sought in USA. Micropad Ltd. is a member of the Quest Group of Companies, manufacturer of Datapad Systems.

Booth No. 2707
QUME
2350 Qume Drive, P.O. Box
50039, San Jose, CA 95150
(408) 942-4000

Qume will display a complete family of letter-quality daisywheel printers, accessories, and supplies for applications in word and data processing. In addition Qume's double-sided, double-density flexible disk drives will be dis-

SEE US AT THE NCC,
BOOTH 2553.

DELIVERING
NOW!

TELEX INTRODUCES LESS IN A TAPE DRIVE.

**35% less energy, 30% less heat
25% less space, 40% less cost.**

Our new Series 80 is a 3420 plug-compatible magnetic tape subsystem that can do everything its counterparts can do. It just does it for a lot less.

For example, it can read and write data in either 6250 BPI (GCR), 1600 BPI (PE), or 800 BPI (NRZI) densities with speeds up to 125 IPS. Truly the latest densities and speeds in tape drive technology.

But the Series 80 also has something the 3420 and its alternatives don't — Telex's patented design features which reduce expensive floor space and operating costs.

Telex's Supr-Lite™ Capstan weighs only one-tenth as much as comparable drive capstans. This means the Series 80 can use a much smaller, more efficient drive motor. In addition, Telex's patented Tape Path eliminates large, unsupported spans of tape by utilizing primary and secondary vacuum buffers. This allows for unusually gentle tape handling at high program rates without tape resonance and oscillations.

These features and more let Telex give you a tape subsystem that exceeds industry technology performance. We just do it for a lot less. Less energy. Less heat. Less space. And less cost.

For more about the new, compact, plug-compatible Telex Series 80, call your Telex representative. Or phone our Marketing Department in Tulsa at 918-627-1111.

Our alternative to your spiraling operating costs.



Telex Series 80

IBM 3420

The innovation continues... TELEX®

Telex Computer Products, Inc.
Terminals/Peripherals/Data Entry and Word Processing Systems/OEM Products

6422 East 41st/Tulsa, Oklahoma 74135/(918) 627-1111
332 Consumers Road/Willowdale, Ontario M2J1P8/(416) 494-4444

played. They use state-of-the-art technology to give superior data integrity through improved disk life, data reliability, and drive serviceability. These drives are ideal for all types of applications such as intelligent terminals, small business systems, point-of-sale systems, and peripheral memories for minicomputers and microcomputers.

Booth No. 2418
RACAL-MILGO, INC.
8600 N.W. 41st Street,
Miami, FL 33166
(305) 592-8600

The Racal-Milgo exhibit will feature the latest data communication products in four categories: Modems--for dial-up or dedicated service at speeds up to 9600 bits per second; Network Control Systems--for monitoring complete telecommunications networks from a central site; Data Encryption products for data security; Terminals for data communications applications. The exhibit will be staffed with qualified technical personnel, and there will be a demonstration of a special type of data communication system.

Booth No. 1838, 1840
RACAL-VADIC INC.
222 Caspian Drive,
Sunnyvale, CA 94086
(408) 744-0810

Racal-Vadic Inc. will display the only complete line of full-duplex 1200 bps modems, compatible with acoustic couplers (1200 bps fdx) as well as VA3400 and 212's. Also shown is the complete range of modems for 300, 1200 and 2400bps direct connect (dial-up) and leased line operation.

Booth No. 4415, 4417, 4419,
4421
RADIO SHACK
700 One Tandy Center, Fort
Worth, TX 76102
(817) 390-3592

Radio Shack TRS-80 Microcomputer Model I and Model II systems. TRS-80 software for Model I and Model II. Leasing. Maintenance/Service Agreements. Radio Shack Computer Centers.

Educational Software & Hardware.

Booth No. 4106
RAIR LTD.
30-32 Neal Street, London
WC2H 9PS, England
01836 4663

Rair Black Box 11 Microcomputer: Advanced 8085 based general purpose microcomputer with Intrical Dual Mini Floppy disk drives. Rair black box hard disk system, providing up to 180 megabytes of cost effective fixed disk storage using the latest 8" Winchester disk technology.

Booth No. 1127
RAMTEK CORPORATION
2211 Lawson Lane, Santa
Clara, CA 95050
(408) 988-2211

Ramtek will exhibit a complete line of raster scan color graphic computers and terminals, graphic and image processing display systems, and intelligent alphanumeric terminals. The company will introduce the Model 6214 Colorgraphic Computer, a stand alone color graphic system, programmable in PASCAL. The new 6214 features 640 X 480 line resolution with large local mass storage capability.

Booth No. 1803, 1805
RANDOMEX, INC.
1100 E. Willow, Signal Hill,
CA 90806
(213) 595-8301

On display will be a complete set of Inspection/Cleaning equipment, as used by Randomex's Data Maintenance Division in providing on-site turnkey disk maintenance service for thousands of small and intermediate size users nationwide. Randomex will also display a quantity of damaged disks, removed from live systems, with explanations about the cause of the problems displayed, and suggested programs to prevent similar problems in the user's installation.

Booth No. 1201, 1300
RAYMOND ENGINEERING
INC., RAYCORDER
PRODUCTS DIVISION
217 Smith St., Middletown,
CT 06457
(203) 632-1000

A complete line of small TAPE DRIVES and TAPE SYSTEMS for digital CASSETTES, MINICASSETTES. CARTRIDGES and MINICARTRIDGES. Offerings range from OEM drive configurations to STAND-ALONE systems, with such standard interfaces as RS232C and IEEE488. New drives for cassettes and mini-cartridges are featured that complement existing products, all of which are offered with new features and flexibility provided by software driven interfaces.

Booth No. 3001, 3003, 3005,
3007
REMEX DIVISION
EX-CELL-O
CORPORATION
P.O. Box C19533, Irvine, CA
92713
1733 Alton St., Irvine, CA
92714
(714) 957-0039

Manufacturer of data storage products for OEM's, floppies and packaged subsystems — single/double density, single/double sided, standard or intelligent drives. Packaged Winchester subsystem, highly intelligent controller with 20 Mbytes Winchester and up to 2.4 Mbytes floppy storage. Also, the manufacturer of most complete line of punch tape readers, punches, and reader/punch combinations including a full line of accessories, serial interfaces and many popular computer interfaces.

Booth No. 3407, 3409
RESOURCE
MANAGEMENT/DIVISION
CUTLER-WILLIAMS
2474 Manana Drive, Suite
101, Dallas, TX 75220
(214) 358-0166

Preview the 80's at the 8th World Computer Congress

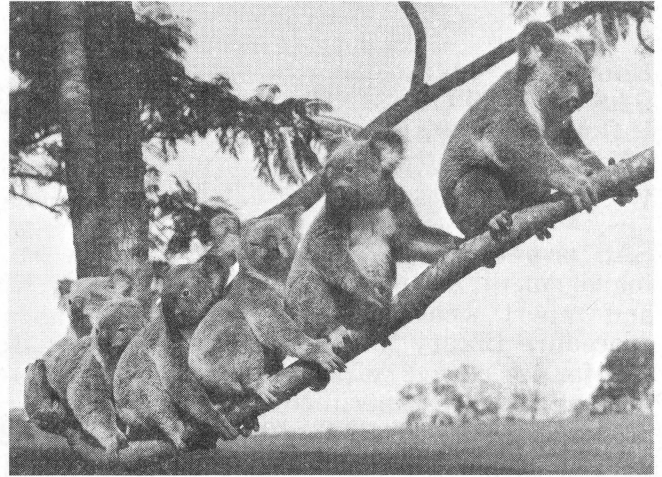
Tokyo

October 6-9, 1980



Melbourne

October 14-17, 1980



Here is a chance without equal to be part of what promises to be one of the most rewarding and significant international computer congresses ever held.

For the first time in its 21-year history of gathering together the world's foremost information scientists, the Eighth World Computer Congress (IFIP 80), sponsored by the International Federation for Information Processing, will be held in the Asian/Western Pacific Region where the growth of computer technology and applications has been most dynamic in recent years.

Japan and Australia are your hosts for this distinguished triennial worldwide gathering. And they

cordially invite all Americans involved with computer sciences and automated information systems to pursue their professional interests in the context of their two cultures. Join with representatives of 39 participating IFIP countries to witness and help shape the direction that information processing will take in the decade ahead.

By combining the benefits of participating in the world's best technical sessions with this unique opportunity for cultural and personal enrichment, world travel, and state-of-the-art information exchange, the Eighth World Computer Congress could be *your* event of a lifetime. Budget and plan now to be there in October, 1980.

An Unprecedented Opportunity To explore the world's newest information technologies and its oldest cultures

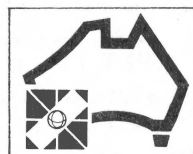
To register or for more information, contact:

AFIPS

1815 North Lynn Street, Suite 800
Arlington, Virginia 22209
(703) 243-4100

International Federation for Information Processing/U.S. Organizing Committee

c/o AFIPS, 1815 North Lynn Street, Suite 800, Arlington, VA 22209



Booth No. 3009, 3011
RUSCO ELECTRONIC
SYSTEMS
1840 Victory Boulevard,
P.O. Box 5005, Glendale, CA
91201
(213) 240-2540

CARDENTRY access control and equipment monitoring systems utilized for premises door control, parking lot control, copy machine monitoring and time and attendance systems.

Booth No. 4446
SAS INSTITUTE INC.
P.O. Box 8000, Cary, NC
27511
(919) 467-8000

SAS is a total system for data management, statistical analysis, and report writing. The SAS procedure library includes routines for descriptive statistics, analysis of designed experiments, regression, multivariate analysis, printer graphics, and utility applications. SAS runs on IBM 360/370 and compatible machines under OS, OS/VS, and CMS, in batch and interactively under TSO and CMS.

SASgraph offers device-intelligent, interactive color computer graphics under VM/CMS and TSO.

SASets provides procedures for econometric and time-series applications.

Booth No. 2757, 2759, 2761, 2763
SCIENTIFIC
MEASUREMENT
SYSTEMS, INC.
26 Olney Avenue, Cherry Hill, NJ 08003
(609) 424-5220

Series-100 Tape Mount Display & Control System used by IBM & Honeywell users to display tape/disc mount & dismount instructions to operators. Complete system displayed including label printer & status display CRT. Also displayed is a NET/ALERT Teleprocessing Network Monitoring & Performance System.

Booth No. 2609, 2611, 2613, 2615, 2617, 2619
SCI SYSTEMS INC.
P.O. Box 4000, 8600
Memorial Parkway,
Huntsville, AL 35802
(205) 883-4800

Minicomputers, controllers, terminals, printers, supervisory systems, financial systems.

Booth No. 4413
SHELDON INDUSTRIES, INC.
243 W. Maple Avenue,
Monrovia, CA 91016
(213) 358-2588

POS terminals, CERs and low cost printing terminals.

Booth No. 2462
SHUGART ASSOCIATES
435 Oakmead Pkwy,
Sunnyvale, CA 94086
(408) 733-0100

Shugart will display its complete family of disk drive products including single and double-sided floppys and Minifloppys™; 8-inch Winchester fixed disk drives; media and controllers.

Booth No. 1723
SOCIETY FOR COMPUTER
SIMULATION
P.O. Box 2228, La Jolla, CA
92038
(714) 459-3888

The Society will display its technical publications and periodicals and will provide information on the benefits and advantages of professional membership. Literature about its upcoming conferences will also be available.

Booth No. 1816, 1818
SOFTWARE AG OF
NORTH AMERICA, INC.
11800 Sunrise Valley Drive,
Reston, VA 22091
(703) 860-5050

Software AG of North America, Inc., offers state-of-the-art software products and distributed data processing solutions. Products include ADABAS, a data base management system, COM-LETE, a data communication system, NATURAL, a data base

interactive language, and ADABAS-M, a DBMS for the mini. These products are known for their flexibility, ease of use and performance. Consulting and time sharing services are also available.

Booth No. 4422, 4424, 4426
SOLA, A UNIT OF
GENERAL SIGNAL
1717 Busse Road, Elk Grove Village, IL 60007
(312) 439-2800

SOLA power protectors-Solatron/Acuvolt line voltage regulator for computers combines fast response, tight voltage regulation, no moving parts, adjustable output, remote sensing, compactness and high KVA capacity. Micro/minicomputer regulator provides ultra isolation from transverse and common mode noise, suppresses transients, protects against overloads, serves as a portable dedicated line. •U.P.S.-Uninterruptible Power Source ends damage and shutdown from blackouts, voltage spikes, brown-outs and other line problems, permitting continuous operation during a commercial line failure.

Booth No. 1200
SPATIAL DATA SYSTEMS, INC.
P.O. Box 249, Goleta, CA
93017
(805) 967-2383

The EyeCom II system is a complete image input and display device for quantifying the brightness variation in a scene or image. The EyeCom II features video display, alphanumeric display, graphics overlay, and picture refresh memory for black and white, pseudocolor, or true color rendition. The interactive capabilities include joystick cursor, alphanumeric keyboard, and 12" B/W display monitor. System resolution is 640 X 512 X 8-bits per field of view.

Booth No. 4045
SPECIALIZED PRODUCTS CO.
2324 Shorecrest Drive,
Dallas, TX 75235
(214) 354-4663

Field engineers attach tool service kits; hand tools.

Shrewd?

Can a terminal really be called "shrewd"? When it's very smart and very inexpensive that's the most appropriate word for it.

ACT-5A

is definitely a shrewd terminal.

Extra cursor and editing controls save you time.

Why try to do it the hard way? The ACT-5A has four separate cursor controls to speed things up, plus eight additional keys to give you instant access to 17 special ACT-5A functions.

Three forms of numeric entry.

Pick the one you do best: standard type-writer format, IBM Model 29 keypunch, or the separate 14 key calculator-type keypad. All three are built into the ACT-5A keyboard.

Standard and split-screen, both with smooth scroll.

Find another smart terminal with all that... and reduced intensity and underline and blinking fields and reverse video, AND you can combine them all in any field.

Entire logic assembly is on one board mounted vertically at the rear.

That's the most logical place for it. Because of the modern, low power design, no fan is required for cooling the board when it's in

that position, and it's easily accessible for service or modification without disturbing the keyboard or video.

ACT-5A can get smarter.

It's designed to receive an optional factory programable ROM that will add and/or modify features.

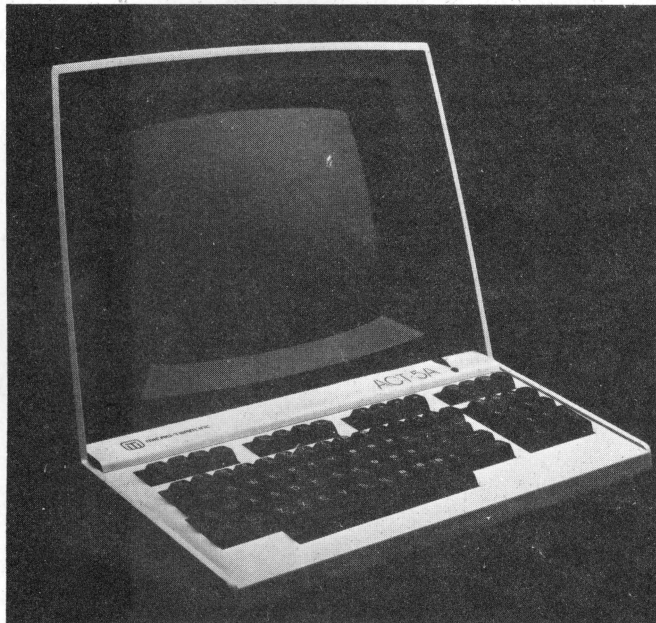
All the way to intelligent.

For the ultimate in flexibility, an optional RAM may be down-loaded from the host computer. This is a feature never before offered on such an inexpensive unit.

Inexpensive?

Yes, and frankly we are surprised. First we designed and built a modern, high quality smart terminal with all the extras... no skimping anywhere. Then we priced it to make a fair profit. Now we find that we have the most terminal for the least money in the industry.

Isn't that nice.



Shrewd.

Booth No. 1455
SPERRY UNIVAC, A
DIVISION OF SPERRY
CORPORATION
MS S2SE10, P.O. Box 500,
Blue Bell, PA 19424
(215) 542-4133

Sperry Univac will exhibit and demonstrate recent additions to its extensive product line: a new communications terminal for distributed processing environments, the SPERRY UNIVAC V77-800, and a new small general purpose computer system.

Booth No. 3218
STRUCTURED METHODS,
INC.
7 West 18th St., New York,
NY 10011
(800) 221-8274, (212) 741-
7720

Structured Methods, Inc. provides training in structured software development techniques including: user training, structured analysis, design and programming and quality assurance and testing. Also, provides consulting on standards and methodology development as well as development personnel for structured projects.

Booth No. 1345, 1347, 1349
SUMMAGRAPHICS
CORPORATION
35 Brentwood Avenue,
Fairfield, CT 06430
(203) 384-1344

DATAGRID II — low-cost automated drafting system for creating engineering drawings, PC Boards and maps. SUMMAGRID — high accuracy, high resolution, back lighted digitizer 42"X60" for graphic data input. BIT PAD ONE — low cost digitizer for CRT cursor control and business forms or order entry.

Booth No. 2216, 2218, 2220
SYSTEMS FURNITURE
COMPANY
13900 South Figueroa
Street, Los Angeles, CA
90061
(213) 327-4000

See SFC's complete "system" of DP oriented furniture and enclosures. Data Desks, Integrated

Electronic Work Stations and Electronic Cabinetry to fit every environment are featured. NEW: A truly UNIVERSAL stand with easily removable Paper Catch and a variety of tops to fit virtually any terminal device. NEW: Fiberglass Terminal Enclosures, designed and produced to customer specifications. U.L. approved resins used exclusively for ultimate fire protection characteristics. Stop by to discuss your needs.

Booth No. 1207
TAB PRODUCTS
COMPANY
1451 California Ave., Palo
Alto, CA 94304
(415) 858-2500

TAB Products Company, Electronic Office Products division, will display its family of diskette products. Included are:

1. A 701 Single Key Station with Binary Synchronous Communications
 - a. Handles IBM's batch protocols: 2770, 2780, 3780, and 3741.
 - b. Operator selectable.
 - c. Can be used in interactive mode.
2. A 701 with a 9-track tape converter and auto-loading diskette pooler.
3. A 702 Dual Key Station with 2400 and 4800 modems.
4. A 200-cps printer
 - a. To show unattended print operation for remote locations.

A mini-burster will also be on display.

Booth No. 1527
TALLY CORPORATION
8301 S. 180th St., Kent, WA
98031
(206) 251-5500

Serial & Line Printers from 160 CPS to 300 LPM, including quick forms access and auto front feed options.

Booth No. 2642, 2644, 2646
TANDBERG DATA, INC.
4060 Morena Blvd., San
Diego, CA 92117
(713) 270-3990

Tandberg TDI-1050 Magnetic Tape Transport Series and integral Formatter, TDC-3000 Digital

Cartridge Recorder and various interfaces, 1/2" and cartridge Serial Communication Recorders, TDC-3164 6400 bpi Cartridge Recorder, GPIB-3000 Cartridge Recorder.

Booth No. 4215
TANDEM COMPUTERS,
INC.
19333 Valco Parkway,
Cupertino, CA 95014
(408) 996-6000

Tandem Computers manufactures multiple processor systems, designated as Tandem's NonStop systems. Configurations from 2 to 16 processors, peripherals, programming languages, data base management, transaction processing, and networking system software. Designed to minimize cost per transaction and primarily intended for use by businesses which depend on continuous availability of their system, such as those with heavy volume on-line transaction processing. The systems are designed to protect information stored from damage due to any module failure.

Booth No. 2709, 2711, 2713,
2715
T-BAR INCORPORATED
141 Danbury Road, Wilton,
CT 06897
(203) 762-8351

T-Bar, Inc. will feature: Series 3900 family of IBM and DEC compatible peripheral switches for keeping information systems on-line; microcomputer based Intelligent Matrix Control (IMC) for automatically rearranging computer to peripheral connections; MASS+, Multiple Access Switching System, which can access data communications lines from an operator's command terminal for rapid network restoral, fault isolation and monitoring; the Explorer family of T-Bar digital data link testers, used as an intelligent monitor, front end or terminal emulator and loopback tester.

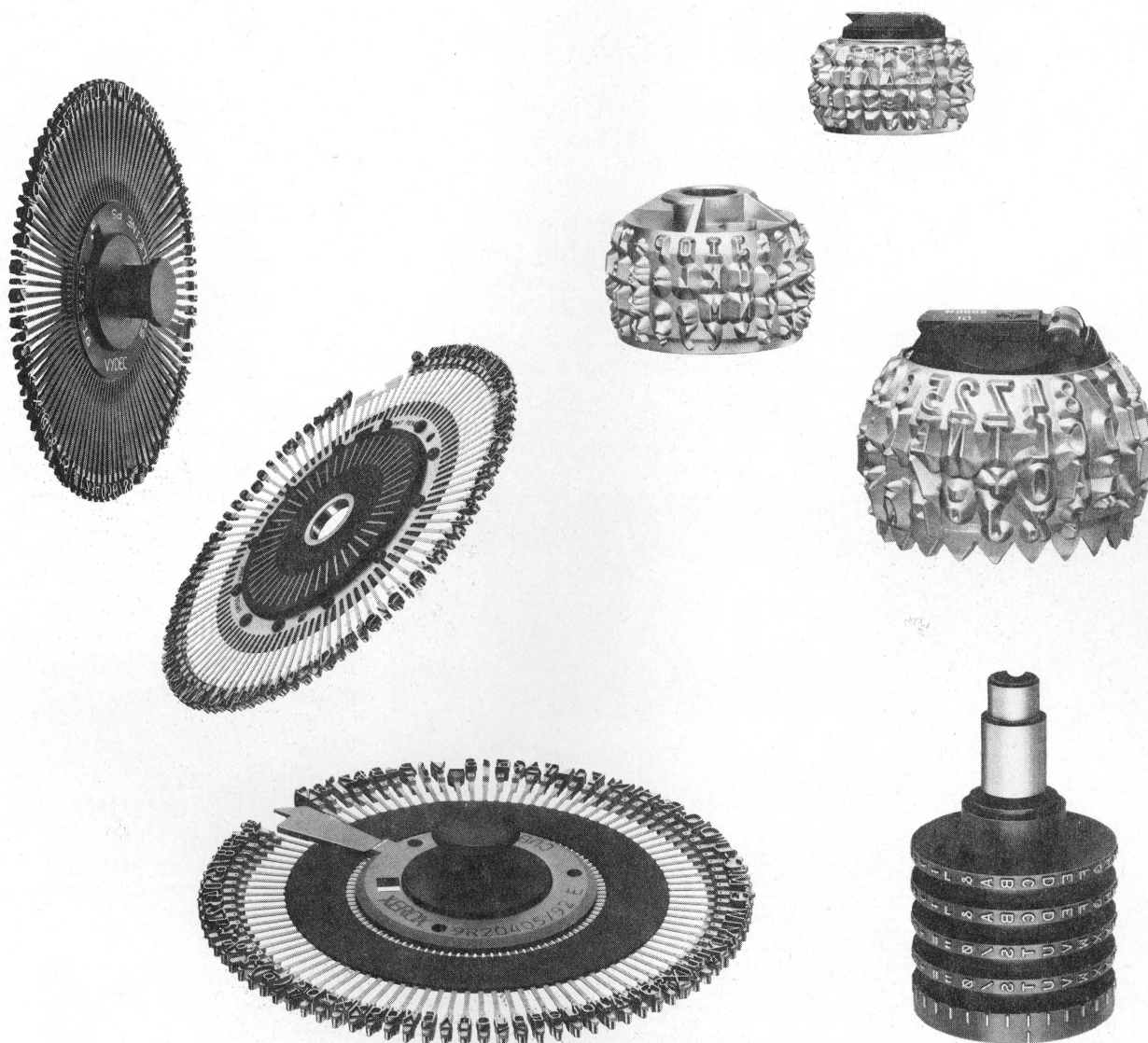
THE WORLD'S LARGEST MANUFACTURER OF TYPES

CARACTERES SA

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SWITZERLAND

CARACTERES USA Inc.

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MASSACHUSETTS



BOOTH No. 1221

Types of any kind: drums, chains, discs, balls, wheels, etc...

Address your enquiries to :

CARACTERES SA, 30, rue du Plan
2002 NEUCHÂTEL, SWITZERLAND
Telephone (038) 25 07 22

Booth No. 2507
TEAC CORPORATION OF AMERICA
 7733 Telegraph Rd.,
 Montebello, CA 90640
 (213) 726-0303

1. Complete line of Cassette Tape Transport MT-2 with and without LSI Controller.
2. 5 1/4" inch Floppy Disk Drive FD-50 Series: *FD-50A Single Sided, Single/Double Density, 40 Track; *FD-50B Double Sided, Single/Double Density, 40 Track; *FD-50C Double Track, Single/Double Density, 77 Track.

Booth No. 1412
TECHNOLOGY TRANSFER INSTITUTE
 P.O. Box 49765, Los Angeles, CA 90049
 (213) 476-1331

Technology Transfer Institute is the only organization presenting the James Martin Seminar in North America. We are also devoted to the presentation of Seminars of Excellence in the fields of

computer communications, DP systems, networks and top management. We are primarily concerned with the quality on instruction & information transfer which takes place when participants are exposed to experts presenting the latest information in their fields. TTI will have brochures detailing each of more than 25 such seminars, as well as class notes and textbooks from past seminars.

Booth No. 1353, 1355, 1357
TECHTRAN INDUSTRIES, INC.
 200 Commerce Drive,
 Rochester, NY 14623
 (716) 334-9640

Products shown in the Techtran booth include their full family of microprocessor based storage terminals. The 900 Series microdiscs and the 800 Series DATA-CASSETTES comprise Techtran's family of RS-232 plug compatible recorders. Newly developed features will be highlighted.

Booth No. 2327
TEKTRONIX, INC.
 P.O. Box 500, Beaverton, OR 97077
 (503) 644-0161, Ext. 3054

Visit the Tektronix exhibit and see more ... in the 4050 Series of Desktop Graphic Computing Systems; the 4660 Series of Multicolor Plotters and 4630 Series of Video and DVST Hard Copy Units; the 4020 Series of Computer Graphic Terminals including color graphics, and the 4016-1 25" Graphic Terminal; the 833 Data Communications Tester, and more in high-performance Portable Oscilloscopes in the new 468. Let Tektronix show you at NCC '80!

Booth No. 2356, 2358
TELEDYNE INET
 2750 West Lomita Boulevard, Torrance, CA 90509
 (213) 325-5040

Teledyne Inet will feature its 415HZ uninterruptible Power System which is specifically designed to convert Raw 60HZ input power to truly conditioned 415HZ output for computer systems. In addition Teledyne Inet manufactures both rotary and static frequency converters and motor generators for all precise power applications.

Booth No. 2249
TELEFILE COMPUTER PRODUCTS, INC.
 17131 Daimler Street,
 Irvine, CA 92714
 (714) 557-6660

Telefile unveils its new 32-bit Xerox/Sigma-compatible T-85 computer systems complete with new mainframe, console and broad array of Xerox-compatible peripherals. The T-85 takes advantage of latest technological advances and gives present Xerox users a place to grow. The computer is transparent to all Xerox-developed software including CP-V and CP-R operating systems, still considered one of the best ever developed by annual Datapro survey.

THE ASR FOR THE 80'S



... and beyond

ASR-334

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MARCH 23, 24, 25, 1981

The Office Automation Conference, the most comprehensive overview of the industry, will be held next year in Houston, Texas. 1981's OAC will feature more exhibits, more seminars, and more workshops, all bringing you the latest developments in office automation.

We're planning now to make next year's conference even more exciting and informative than our first. If you'd like to participate as an exhibitor or session leader, let us know now. The sooner we hear from you, the sooner we can include you in next year's program. For more information contact: AFIPS, Dept. O, 1815 North Lynn Street, Arlington, Virginia 22209

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60077
(312) 982-2000

Teletype Corporation will demonstrate the flexibility of its 4540 keyboard display based series and provide hardcopy output on its super quiet 300 lpm printer. Visitors will also see the paper saving model 40 Forms Access Printer along with the complete line of model 43 teleprinters. The latter will feature several new enhancements.

Booth No. 1264, 1265
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3190 Coronado Drive, Santa Clara, CA 95051
(408) 246-5428

A series of 4 Smart CRT Terminals for use in the General Data Communications Market featuring all of the most requested attributes and features of a Smart Terminal, such as, reverse video, half intensity, underline, Blink-Blank protected fields, block and conversation transmission. 10 Baud Rates, character and line insert and delete. Printer Port and many more.

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2559, 2561, 2563
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Tulsa, OK 74135
(918) 627-1111

Terminals will exhibit the latest from the 3274/3276 plug-compatible terminal subsystem including its new down-sized 3278 compatible executive model display—the 278E. Also a newly introduced ASCII terminal display will be exhibited. The peripheral products group will exhibit a 3420 plug-compatible

magnetic tape subsystem—the Series 80. The latest offering in energy and space saving design performance. The OEM group will exhibit a tridensity tape subsystem that offers all three standard operating densities—800/600/6250 BPI—in a single unit.

Booth No. 1605
TERMIFLEX
CORPORATION
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NH 03060
(603) 889-3883

Termiflex will introduce two new control/display units. The HT/12 featuring two lines of 16 characters and the HT/11 with a single line of 16 characters. In addition, Termiflex's line of control/display units which provide computer systems with full control panel functions and operation (operator) prompting will be demonstrated.

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Featuring the MS109 Data Communications Resource Management System, capable of measuring hundreds of communications lines simultaneously and making it practical to measure your entire network. The MS109 is part of Tesdata's AMS Computer Resource Management System, which is used to aid in maximizing the efficiency of installed computer systems.

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INCORPORATED
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Houston, TX 77001
(713) 937-2538

Texas Instruments personnel will demonstrate the latest equipment in their DS990 Commercial Computer Systems, Silent 700 and OMNI 800 Electronic Data Terminals, distributed processing systems, and Personal Computing Products.

Booth No. 2842, 2844, 2846
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01-0533536007

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TUBS currently does not have any agents for software in the USA and this is one of the major aims of attendance at Anaheim.

Booth No. 1311, 1313
TOKYO JUKI INDUSTRIAL
COMPANY LTD.
3186-G Airway Ave., Costa Mesa, CA 92626
(714) 540-4533

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Booth No. 1243, 1245
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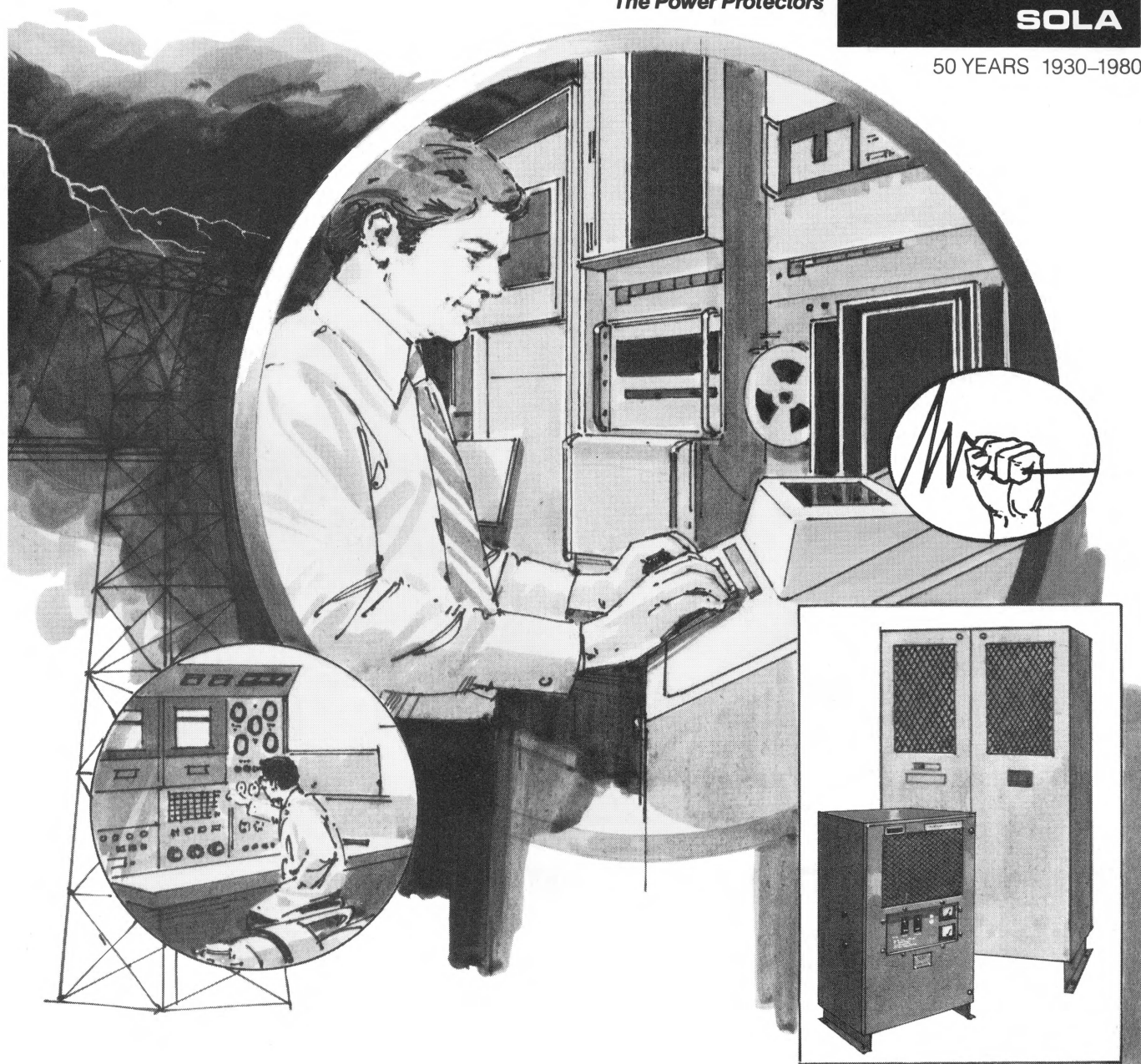
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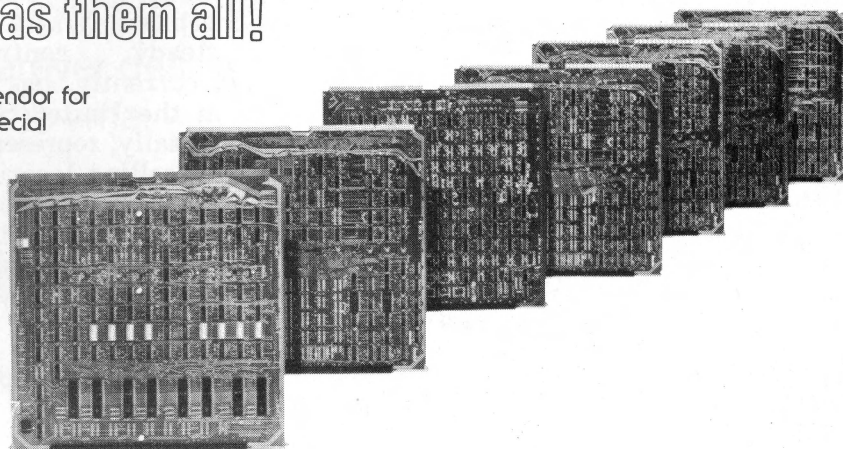
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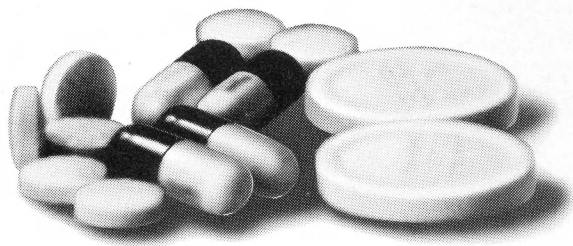
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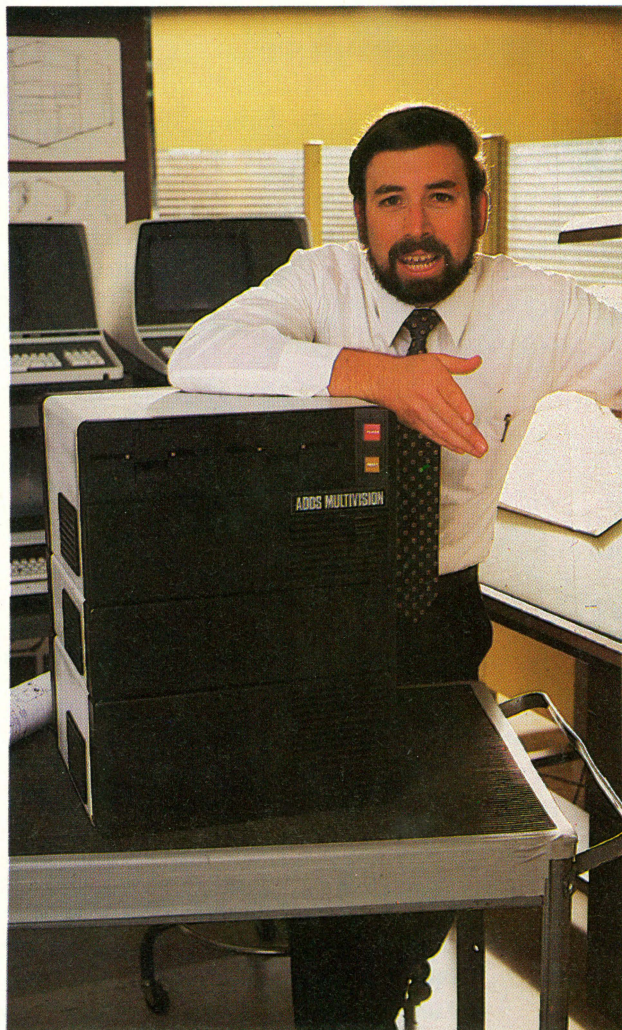


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10 Drexel Court, Spring
Valley, NY 10977
(914) 425-1535

Monthly Magazine for TRS-80 owners. Software for both the TRS-80 Model I and Model II.

Booth No. 133, 134
CONTROL DATA CORPORATION
8100 34th Avenue South,
Minneapolis, MN 55420
(612) 853-5699

Booth No. 22
CORVUS SYSTEMS, INC.
900 S. Winchester Blvd.,
San Jose, CA 95128
(408) 246-0461

Corvus manufactures a 10 megabyte hard disk drive that is compatible with Apple, TRS-80, S-100 BUS, LSI-11, and Altos Computers. In addition, a 100 megabyte tape back-up system is pro-

vided for the above computers.

Booth No. 5, 6
CREATIVE COMPUTING
P.O. Box 789-M,
Morristown, NJ 07960
(201) 540-0445

Creative Computing, the Number 1 software and applications magazine in the personal computing market. Creative Computing features articles by the foremost authors in the field, evaluations of hardware and software, programming techniques and applications for the hobbyist, small businessperson, and educator. Creative Computing Press publications. Sensational Software on cassette and floppy disk offers hundreds of programs for recreational, instructional, and small business use. T-shirts. Posters. Games.

Booth No. 79, 80
DIABLO SYSTEMS INCORPORATED
MS L-101, 24500 Industrial
Blvd., Hayward, CA 94545
(415) 786-5228

Diablo has plastic and metal daisy wheel printers which produce superior output for computer users at all levels.

Booth No. 56
ELECTRONIC DATA SYSTEMS - EVOLUTION 1
14580 Midway Road, Dallas,
TX 75234
(800) 527-0278

A professionally written and produced broadcast-quality video-cassette tape library. This library provides instruction, from the ground level and up, on the fundamentals of the computer in general - and the small computer in particular. Subjects covered range from how to select a computer to fit your business to an in-depth examination of data communication. Designed for computer retailers, businessmen, engineers, management, salesmen, data processing personnel and anyone who directly or indirectly interacts with the computer

Booth No. 21
EXECUTIVE INFORMATION SYSTEMS, INC.
31822 Village Ctr. Road,
Suite 102, Westlake Village,
CA 94015
(213) 991-2654

S-100 Based Small Business System based on 8-bit 9080-A-4, 4MHz High Speed CPU, optional equipment includes terminal(s) printer(s) dual 8-inch floppy disk drives and software (A/R, A/P, G/L, & PAY).

Booth No. 60, 61, 62, 63
EXIDY, INC.
390 Java Drive, Sunnyvale,
CA 94086
(408) 734-9410

Exidy Computer Systems.

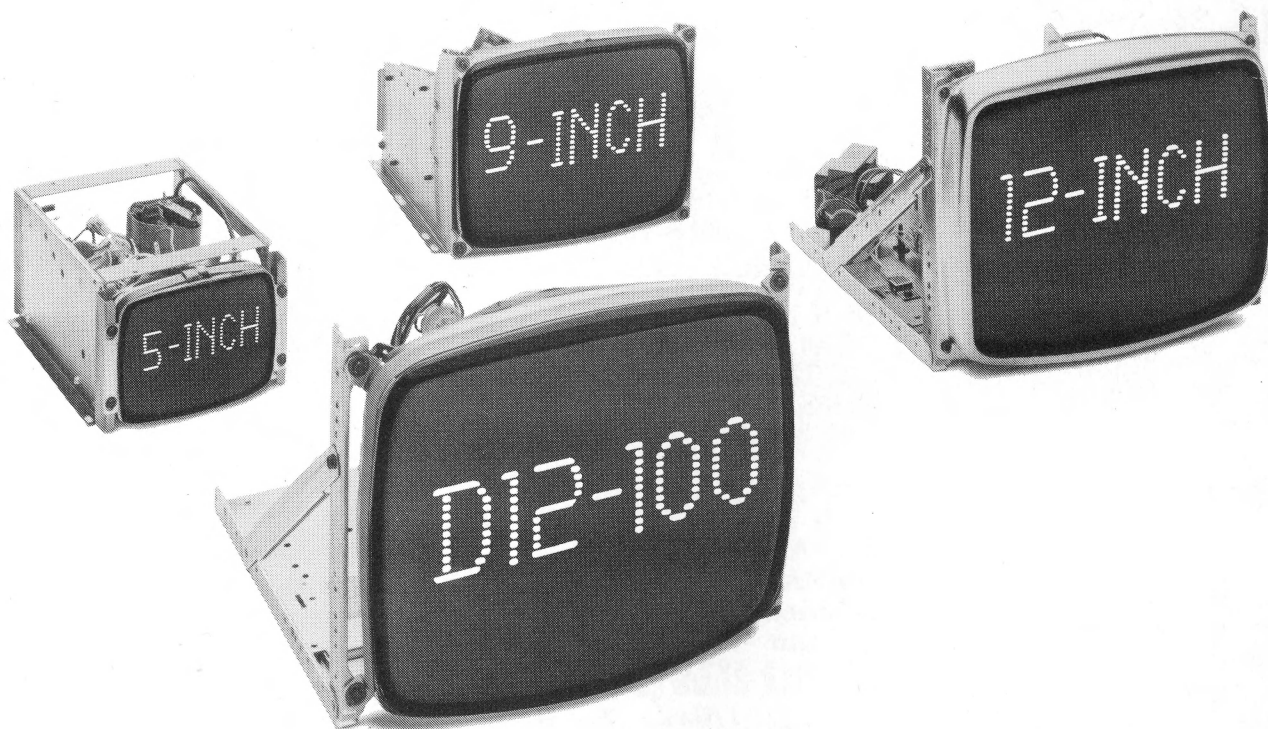
Booth No. 13
FINDEX, INC.
1625 W. Olympic Blvd.,
#707, Glendale, CA 91209
(213) 243-5558

Booth No. 26
HARRIS TECHNOLOGY CORPORATION
1566 LaPradera Drive,
Campbell, CA 95008
(408) 374-2362

Ribbons for word processing and data processing. Custom work stations for word processing and data processing.

Booth No. 129
HAYDEN BOOK CO., INC.
50 Essex Street, Rochelle
Park, NJ 07662
(201) 843-0550

A complete line of computer related books covering programming in almost all languages for both the beginner and the advanced programmer. Also books on hardware for the professional as well as the hobbyist. A new and growing line of tapes and diskettes available for many of the more popular machines.



NOW ZENITH GIVES YOU A BRAND NEW WAY TO MEASURE CRT DISPLAY QUALITY.

Now Zenith technology comes packed into a brand new CRT Display format. Introducing the D12-100. This new model in our expanding line has a diagonal measurement of 12 inches. But the story is much, much bigger.

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To deliver maximum performance at lower cost, our new D12-100 is designed with a 4x5 aspect ratio rather than the currently used 3x4 aspect ratio. In those applications where the D12-100 is appropriate, it offers all the reliability and dependability of our fully featured, top-of-the-line 3x4 aspect ratio models.

No wonder. The D12-100 is designed and tested to meet the same quality and reliability

standards established for all Zenith CRT Displays. Thousands of test hours under extreme humidity, vibration, altitude and temperature conditions. And exhaustive analysis, including electron microscope and thermograph scans in the Zenith Reliability Lab.

APPLICATION ENGINEERING

The D12-100, like every Zenith CRT Display, can be designed to meet your own specifications, as well. We'll meet with you to determine your exact requirements. And then custom build a D12-100 to fit. Since the D12-100 is also the start of a new series of CRT Displays, we'll be happy to talk about

other screen sizes as well.

ZENITH TRADITION

At Zenith, we're building CRT Displays with the same commitment to excellence that's made us number one in the television industry. When you want a product that works, with delivery on *your* time schedule, plus proven reliability and dependability... you want what we've been giving our customers for over 60 years.

More big ideas are coming. For further information and specifications, write: CRT Display Engineering Division, Zenith Radio Corporation, 1000 Milwaukee Avenue, Glenview, Illinois 60025, or call (312) 773-0074.



The quality goes in before the name goes on.

Booth No. 118, 119, 120, 121
HEATH/SCHLUMBERGER
Hilltop Rd., St. Joseph, MI
49085
(616) 982-3205

Microcomputer systems and accessories, softwares, microcomputers, terminals, floppy disks, line printers, etc.

Booth No. 51, 52, 71, 72
HEWLETT-PACKARD CO.
1000 NE Circle Boulevard,
Corvallis, OR 97330
(503) 757-2000 X-2210

Personal/Professional Computation.

Booth No. 33, 34
INDUSTRIAL MICRO SYSTEMS
628 N. Eckhoff St., Orange,
CA 92668
(714) 633-0355

Micro Computer Systems and Components.

Booth No. 20
INTERNATIONAL MEMORIES, INC.
10381 Bandle Drive,
Cupertino, CA 95014
(408) 446-9779

IMI is displaying small high performance Winchester Disk Drives with capacities ranging from 5 to 50 megabytes along with micro-processor based controllers for Winchester Drives.

Booth No. 113, 114, 143, 144
JADE COMPUTER PRODUCTS
4901 W. Rosecrans,
Hawthorne, CA 90250
(213) 679-3313

Booth No. 168, 169
LEEDEX CORPORATION
2300 E. Higgins Road, Elk
Grove Village, IL 60007
(312) 364-1180

Leedex Video-100 and Video 100-80 Monitors.

Booth No. 153
LOBO DRIVES INTERNATIONAL
935 Camino Del Sur, Goleta,
CA 93017
(805) 685-4546

Floppy Disk and 10 Mbyte Hard Disk Memory Systems for TRS-80, APPLE, and S-100 BUS Computers.

Booth No. 151
LOCAL DATA
2701 Toledo Street,
Torrence, CA 90503
(213) 320-7126

Booth No. 171, 172, 173, 174
LRC, AN EATON COMPANY
Technical Research Park,
Riverton, WY 82501
(307) 845-4821

LRC, AN EATON COMPANY, will display its complete 7000 series of dot-matrix impact printers. LRC will also display its 100 million character continuous duty head, the M400 series of dot-matrix printers (which operate at 120 characters per second) and its 7000 Plus, which is a 40 column stand alone unit consisting of an LRC 7040 print mechanism, control and drive electronics, power supply and cabinet. Also on display will be LRC's new 80 column printer mechanism.

Booth No. 57
3M COMPANY
DATA RECORDING PRODUCTS DIVISION
3M Center, Bldg. 223-5N, St. Paul, MN 55101
(612) 733-1892

Information Processing supplies (magnetic media) for personal microcomputer; including mini-diskettes, diskettes, personal computing cassettes, and data cartridges.

Booth No. 67
MEMOREX CORPORATION
San Tomas at Central
Expressway, Santa Clara,
CA 95051
(408) 987-1000

Memorex Corporation will focus

its presentation on high-quality products for information storage. Products featured will include computer media products for data processing and business systems applications. Flexible disc products will be featured.

Booth No. 9
MEMORY MEDIA PRODUCTS
1417 East Edinger Ave.,
Santa Ana, CA 92705
(714) 835-0317

Magnetic Computer Media-Computer Tape/8" & 5 1/4" Flexible Discs/Disc Packs/Tape Racks - Magnetic Video Media-3/4" U-matic Cassettes/BETA & VHS Cassettes Magnetic Audio Media - Audio Cassette Media.

Booth No. 82, 83, 108, 109
MICROAGE
1425 W. 12th Pl., Tempe,
AZ 85281
(602) 967-1421

MicroAge distributes microcomputers, peripherals and software throughout the U.S. and 50 countries. Their Wholesale Price Book lists over 70 vendors including TI, Centronics, DEC, Micro-Source, Hazeltine, Soroc, NorthStar, Zenith, Data General, NEC, Diablo, Qume, Cromemco, Novation, Micropolis, Micro-Term, Televideo, CDC, Fujitsu, Comprint, Scotch, Verbatim, ADDS, U.S. Wholesale: (602) 967-1421; International TELEX: 165-033. MicroAge Computer Stores offers franchise opportunities in computer retailing with a growing chain of stores that are spanning the U.S.

Booth No. 128
MICROAMERICA DISTRIBUTING CO., INC.
21 Putnam Street, Needham,
MA 02194
(617) 449-4310

Manufacturers - Commodore, Superbrain, Texas Instrument, System 33, Atari, NEC, Centronics.

Booth No. 10
MICRO APPLICATION
SYSTEMS, INC.
 5575 North County Road 18,
 Minneapolis, MN 55442
 (612) 559-0320

Terminals and portable computer systems.

Booth No. 69
MICROCOMPUTER
TECHNOLOGY INC.
 3304 West MacArthur Blvd.,
 Santa Ana, CA 92704
 (714) 979-9923

The Microcomputer Technology Inc. and Apparat, Inc. presentation will feature disk drives of different sizes and storage capacities for microcomputer systems. Included are 5 1/4" drives with 35, 40 and 77 tracks, also 8" drives and a 10 meg. hard disk drive.

New from Apparat will be the announcement of the enhancements for New Dos +. The company will show a TRS-80 system with peripherals they have available for the user plus the highly

regarded Apparat New Dos +. Featured will be the 8" add on disk drive for the TRS-80 Model II.

Booth No. 65, 66
MICROMAIL
 P.O. Box 3297, Santa Ana,
 CA 92703
 (714) 731-4338

Micromail offers a complete line of video terminals from TEC, Soroc, and Lear Siegler; printers from Texas Instruments and Diablo; and teleprinters from DEC and Teletype. We supply both end-users and dealers, as well as educational, government, and export buyers.

Booth No. 16
MICROPRO
INTERNATIONAL
CORPORATION
 1299 4th St., Suite 400, San
 Rafael, CA 94901
 (415) 457-8990 Telex: 340-388

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8080 Micro Computers - State of the Art - Professional quality software - At a fraction of the cost you can do both word and Data Processing. More for less - it's here - it's now - it's dynamite!

Booth No. 116, 117
MICROSETTE COMPANY
 777 Palomar Ave.,
 Sunnyvale, CA 94086
 (408) 753-8832

Booth No. 89, 90
MICROSOFT
 10800 NE Eighth, Suite 819,
 Bellevue, WA 98004
 (206) 455-8080

Microsoft is exhibiting their complete line of systems software and high-level languages for 8080, Z80, 8086 and Z80 microprocessors. Products include COBOL, BASIC, FORTRAN and PASCAL compilers, BASIC interpreters, utility software packages, and a database management system. The Microsoft Consumer Products Division is showing their

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 2100 Liberty St., Box 311, Easton, Pa. 18042 Tel. (215) 253-3541

line of end-user software packages for popular microcomputers.

Booth No. 54, 55
MICROTRONIX, INC.
P.O. Box Q, Philadelphia,
PA 19105
(215) 665-1112

Microcomputers & Peripherals: all TRS-80 products; Micropolis Disk Drives; Dot Matrix Printers including TI-801 & 820, Paper Tiger, IP 125 & IP 225; Letter Quality Printers including Olivetti ET201 & ET221. Software includes NEWDOS+, Electric Pencil, Typing Tutor, and DATAMASTER (a data-base management system able to sort & generate reports).

Booth No. 140, 141
NEC AMERICA, INC.
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ELECTRIC COMPANY,
LTD.)
130 Martin Lane, Elk Grove
Village, IL 60007
(312) 640-3750

High resolution color CRT's, Personal computer, Monochrome and color CRT displays, Mini floppy disk drive, Printer.

Booth No. 43
NEW WORLD COMPUTER CORPORATION
3176 Pullman Street, Costa
Mesa, CA 92626
(714) 556-9320

Booth No. 131, 132
NORTH STAR COMPUTERS, INC.
1440 Fourth Street,
Berkeley, CA 94710
(415) 527-6950

HORIZON Micro-computers.

Booth No. 37
OMNI MAGAZINE
909 Third Avenue, New
York, NY 10022
(212) 593-3301

Enlargement of Editorial matter.

Booth No. 130
OSBORNE/McGRAW-HILL
630 Bancroft Way,
Berkeley, CA 94710
(415) 548-2805

OSBORNE/McGraw-Hill will display microcomputer books and software for users ranging in expertise from beginners to engineering and computer professionals, and including small business people. Product line includes books, PET and TRS-80 software, and business programs.

Booth No. 48, 49
PERSONAL SOFTWARE INC.
592 Weddell Drive #7,
Sunnyvale, CA 94086
(408) 745-7841

Product Line: Computer Programs (Software) for the following Personal Computers: Apple II, Commodore PET, Radio Shack TRS-80, Atari. Specific Products: VisiCalc, Desktop Plan, CCA Data Management System, Microchess, Bridge Partner, Checker King, Time Trek, VITAFacts series etc.

Booth No. 36
PRODIGY SYSTEMS, INC.
497 Lincoln Hwy., Iselin,
NJ 08830
(201) 283-2000

Prodigy Systems, Inc. is a manufacturer of small business computers which sells through a national network of local dealers. Application software available includes AR, AP, GL, payroll, inventory/invoicing, CPA client write-up, attorney time billing, medical billing and personnel agency. Highly sophisticated operating system and DBMS make system development and maintenance easy. Extensive dealer and end user training and support.

Booth No. 45, 46, 77, 78
RADIO SHACK
700 One Tandy Center, Fort
Worth, TX 76102
(817) 390-3592

TRS-80 microcomputer systems, hardware & software.

Booth No. 154, 155
**RAYGAM (formerly
Computer World)**
6791 Westminister Avenue,
Westminister, CA 92683
(714) 891-2584

Personal Computers and peripherals, books and software.

Booth No. 23, 24, 25
RCA MICROCOMPUTER PRODUCTS
New Holland Avenue,
Lancaster, PA 17604
(717) 397-7661 Ext.-3465

MicroComputer Products.

Booth No. 160, 161, 162, 163
RÉALISATIONS ÉTUDES ÉLECTRONIQUES (R2E)
47 Bedford St., S.E.,
Minneapolis, MN 55414
(612) 378-7060

A complete line of small business microcomputer systems - ranging from a floppy-disk based single board system in a sculptured designer-style cabinet to multiple microcomputer systems with up to 8 processors, multiple display terminals, mass storage disk, line printers and other peripherals. Software includes business BASIC (BAL) and CP/M with MBASIC, CBASIC, COBOL, FORTRAN, PASCAL & APL.

Booth No. 157, 158, 165, 166
ROCKWELL MICROELECTRONIC DEVICES
P.O. Box 3669, RC55,
Anaheim, CA 92803
(714) 632-3729

Rockwell is featuring the AIM 65, a 6502-based, single-board microcomputer that has on-board 20 column printer, 20 character alphanumeric display and full-size, terminal style keyboard. Available in 1K and 4K versions, expandable off-board to 65K.

Booth No. 94, 95, 96, 97
SD SYSTEMS
3017 Lincoln, Garland, TX
75041
(214) 271-4671

SD-100/200 Micro Computer featuring Z-80 CPU, 64K to

256K RAM, 2 Meg Byte on line disk storage, 12 inch video display unit 80 X 24, 8K Bytes ROM, Upper/Lower Case Keyboard with Numeric Pao and Corsor Controls Parallel/ Serial input/output ports, video blinking, underlining, reversed & protected field enhancements.

Booth No. 126, 127
SHARP ELECTRONICS CORPORATION
10 Keystone Place,
Paramus, NJ 07652
(201) 265-5600

Booth No. 18, 19
SMOKE SIGNAL BROADCASTING
31336 Via Colinas, Westlake Village, CA 91361
(213) 889-9340

A line of 6809 and 6800 based microcomputer systems. Business application packages and scientific development systems. Single, double, quad and octo density floppies as well as a hard disk are displayed.

Booth No. 11
SPECTRA LOGIC CORPORATION
2316 Walsh Avenue, Santa Clara, CA 95051
(408) 496-6100

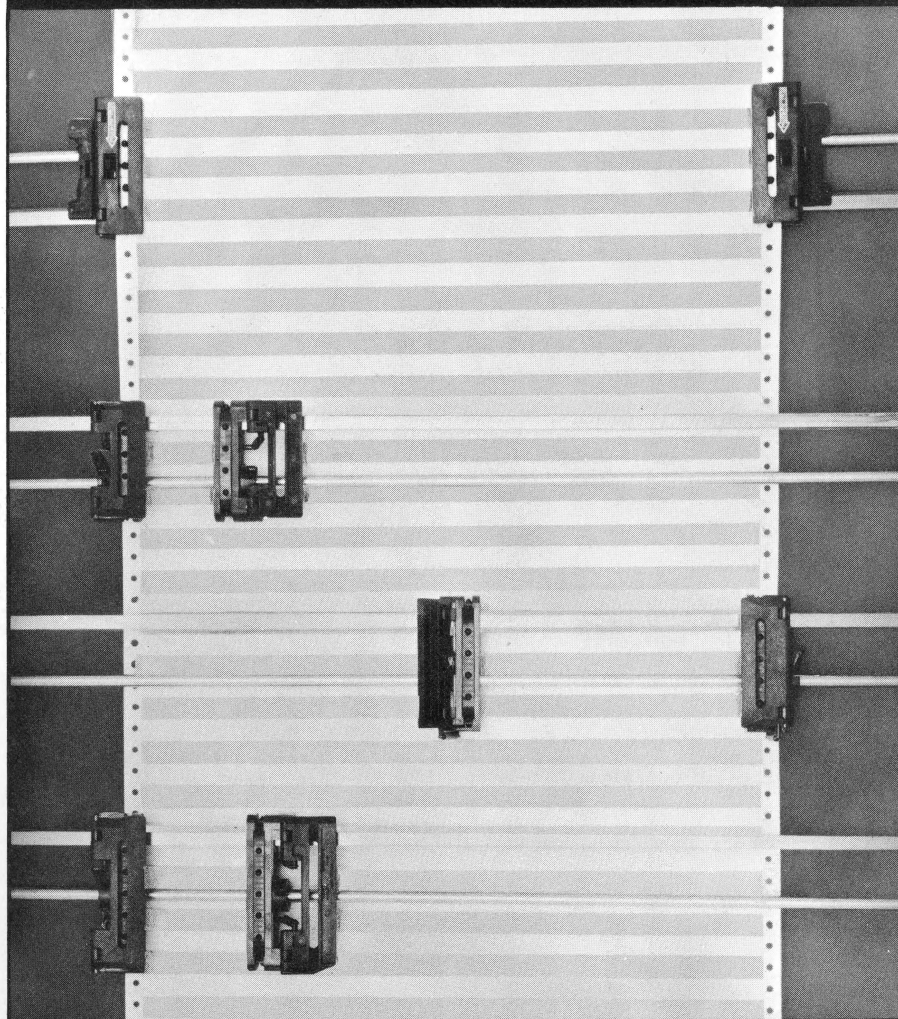
Booth No. 7, 8
SYBEX, INC.
2020 Milvia Street,
Berkeley, CA 94704
(415) 848-8233

SYBEX is a leading internationally distributed publisher of books on microcomputing and a producer of educational materials on microcomputing, including: audio-self study courses, video training packages for industrial and academic use. SYBEX also markets a line of microcomputer software and will exhibit COMPUTEACHER™, a complete self-training system, including a single board microcomputer, at NCC '80.

All SYBEX books are available in many foreign translations and retail/wholesale inquiries are invited. Detailed catalogs of the

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West Coast Sales
(714) 731-8021

complete SYBEX product line are available, upon request, at the SYBEX booth.

**Booth No. 145, 146, 147,
176, 177, 178**

TEI, INC.

**5075 South Loop East,
Houston, TX 77033
(713) 738-2300**

Business Computer Systems -
TEI is a manufacturer and distributor of complete computer systems including hardware, and software. TEI is totally committed to the support of our customers.

**Booth No. 91, 92
TSA SOFTWARE
39 Williams Dr., Montroe,
CT 06468
(203) 261-7963**

Booth No. 68

XYMEC

**17791 Sky Park Circle,
Suite H, Irvine, CA 92714
(714) 557-8501**

XYMEC will display the HY-Q 1000, the all electronic intelligent computer printer. Because of its five on-board micro-processors, it is being billed as the world's first truly intelligent printer, having a myriad of text formatting abilities.

CAUTION



New Paper Tiger™ family on the loose. Booth 1724.



Integral Data Systems, Inc.

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COMPUGRAPHIC CORP.	413, 414, 415
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COMPUTER DEVICES, INC.	1447
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DATA ACCESS SYSTEMS, INC.	4448
DATA DIMENSIONS, INC.	3022
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INNOVATIVE ELECTRONICS, INC.	1753
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INTERTEC DATA SYSTEMS CORP.	2240, 2242, 2244, 2246, 2248, 2250
JAPAN MARKET CONSULTANTS, DIV. OF ENGINEERS INT'L, INC.	1768, 1770, 1771
LOGABAX S.A.	2125, 2127
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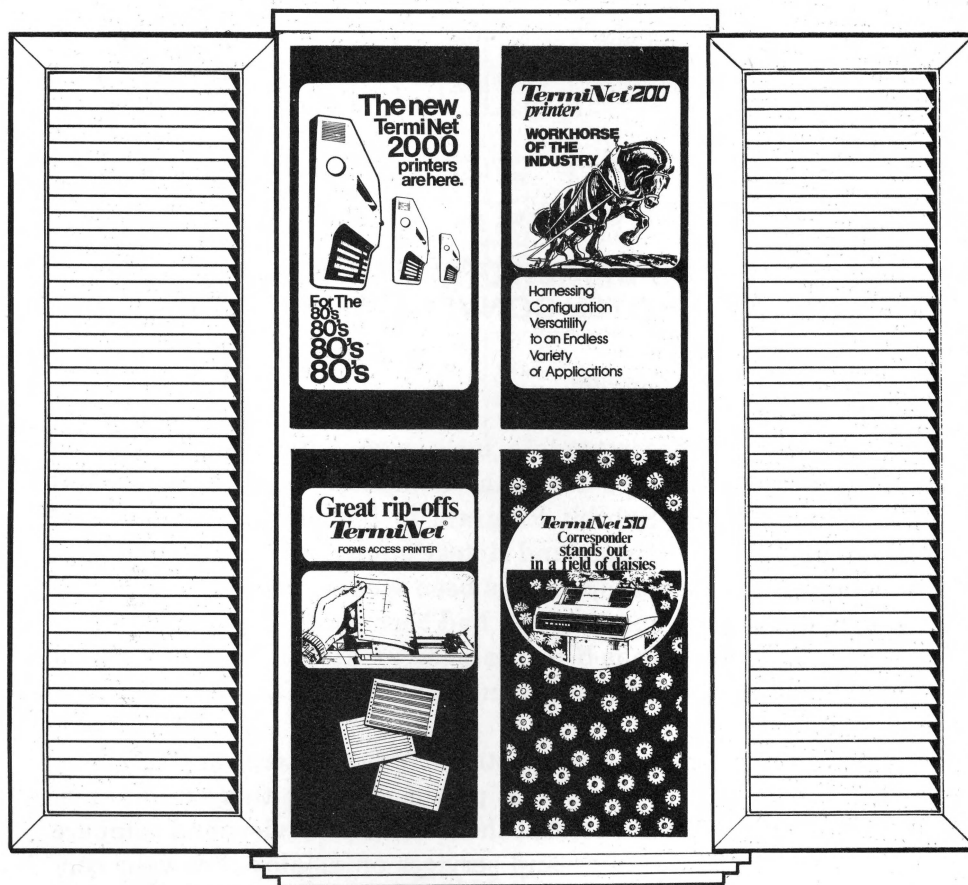
BENSON-VARIAN, INC.	4123
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NATIONAL CSS, INC.	3315, 3317, 3319

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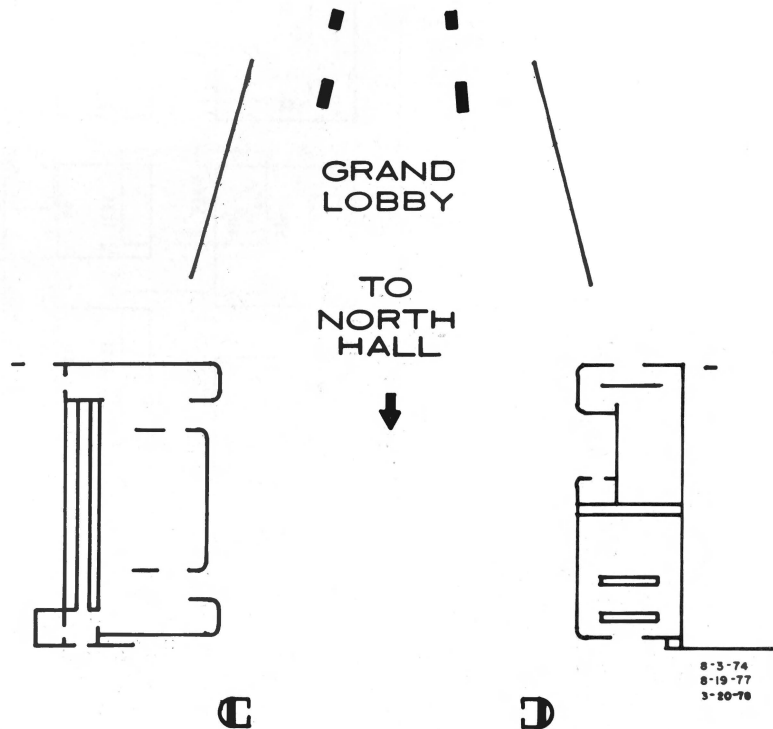
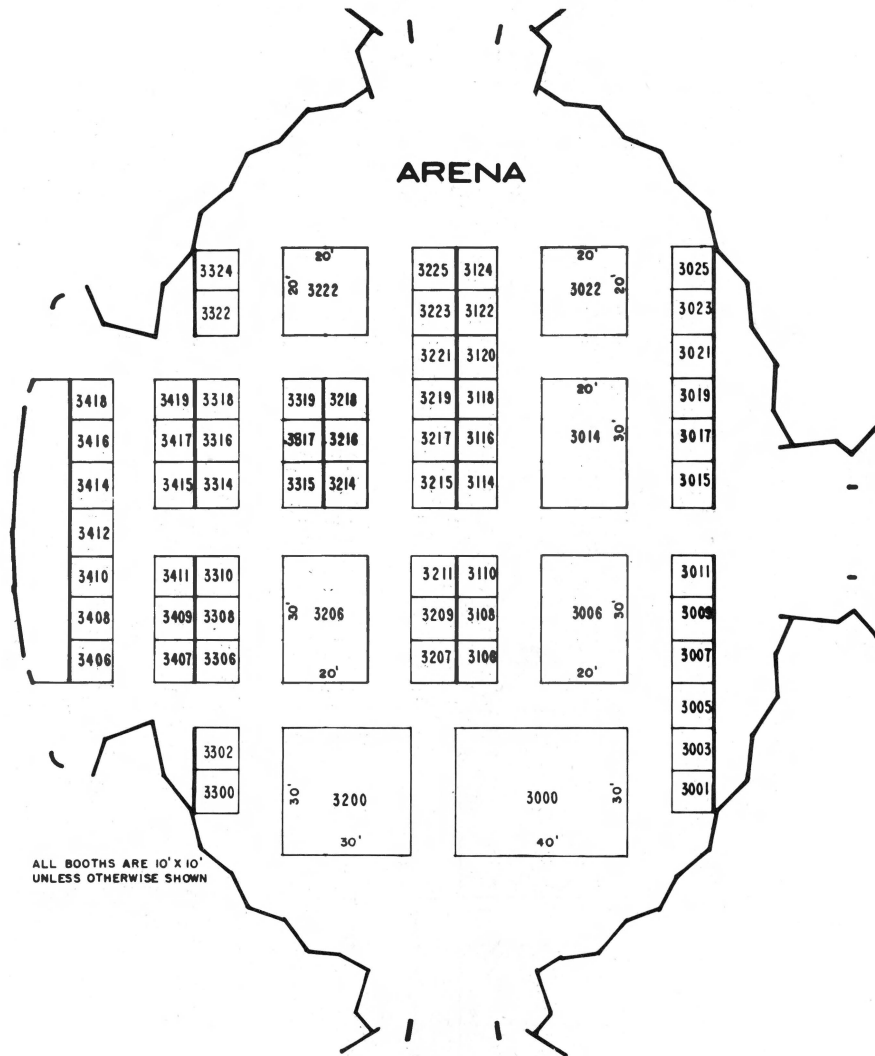
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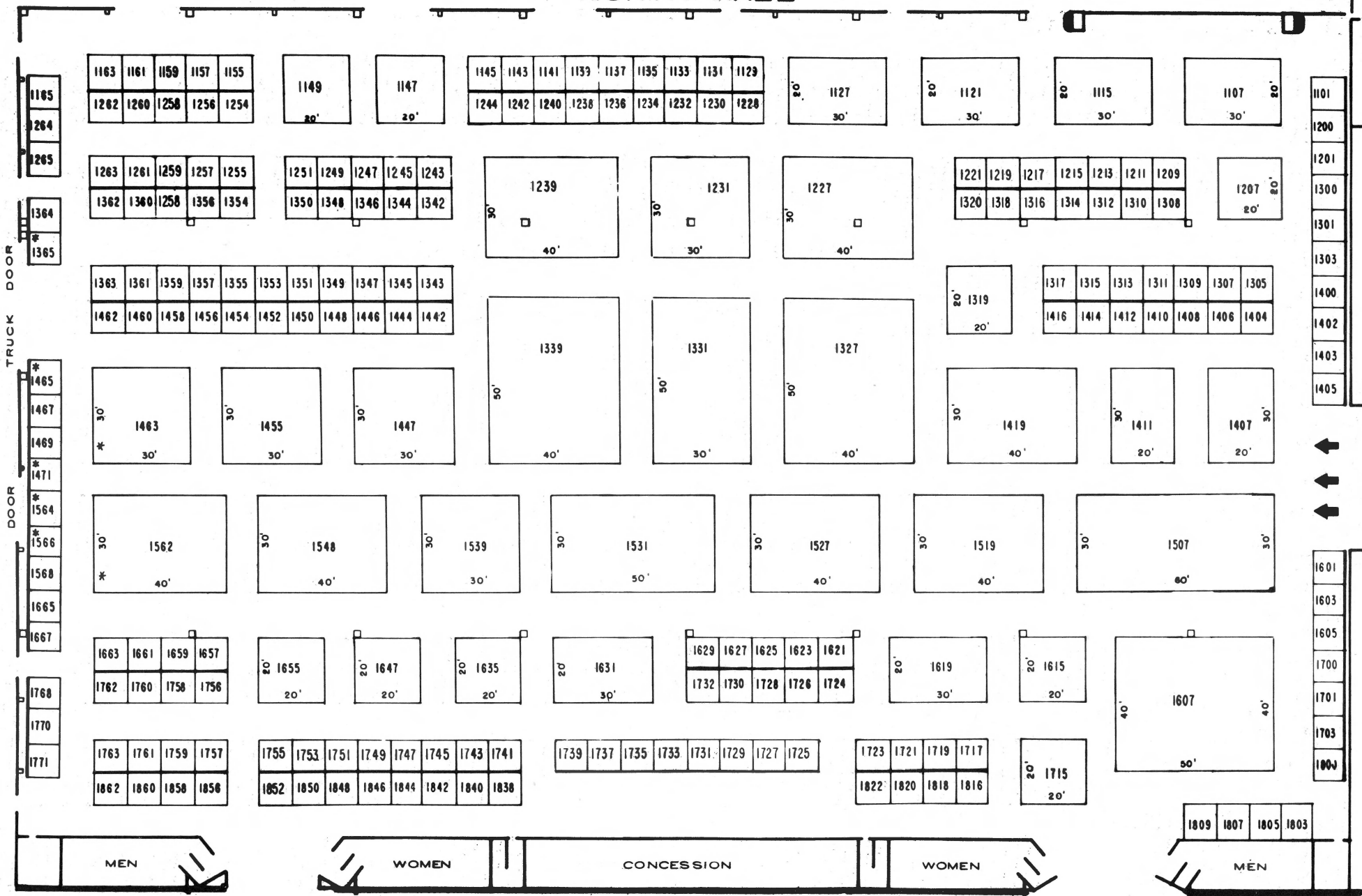


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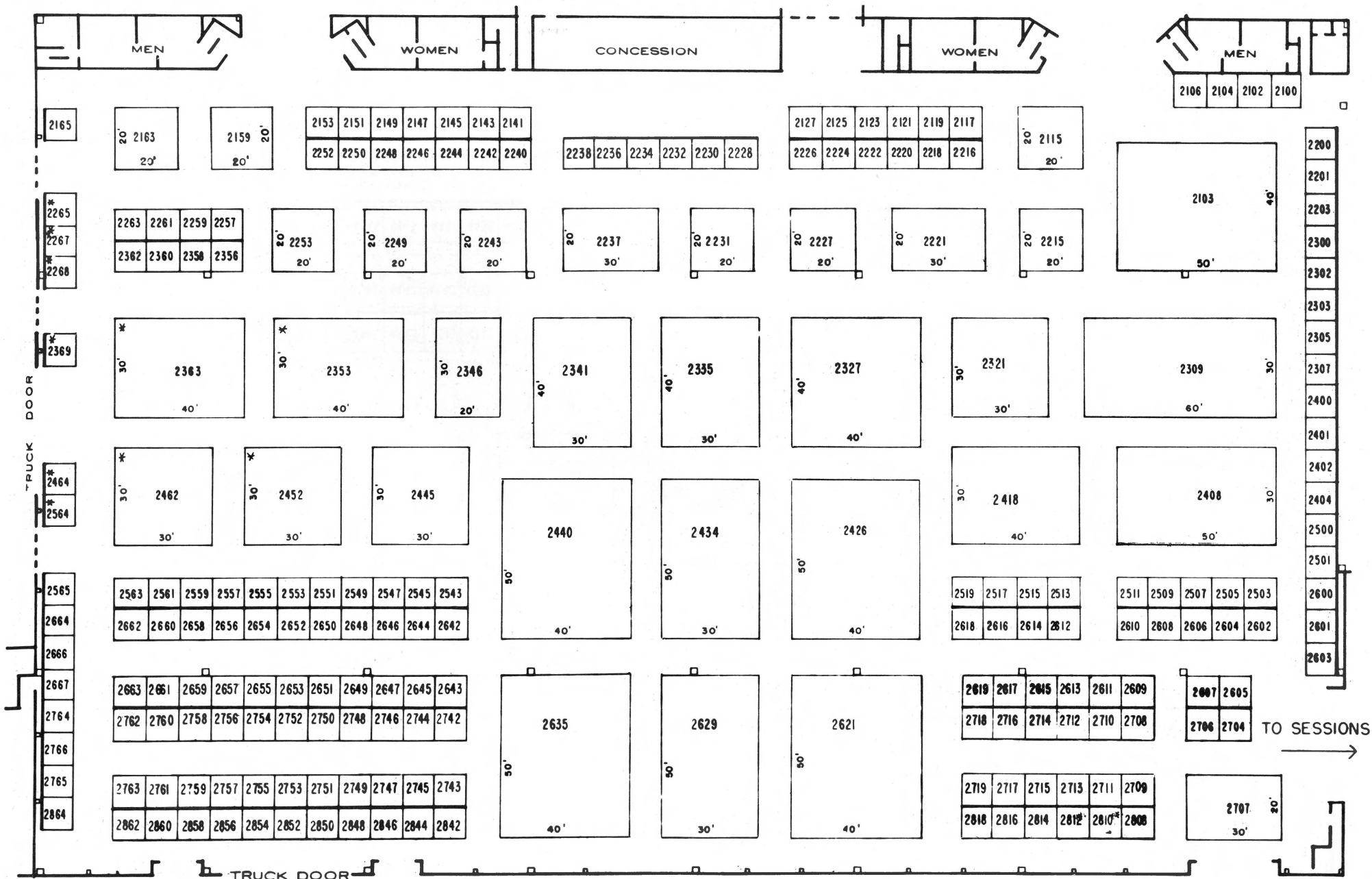
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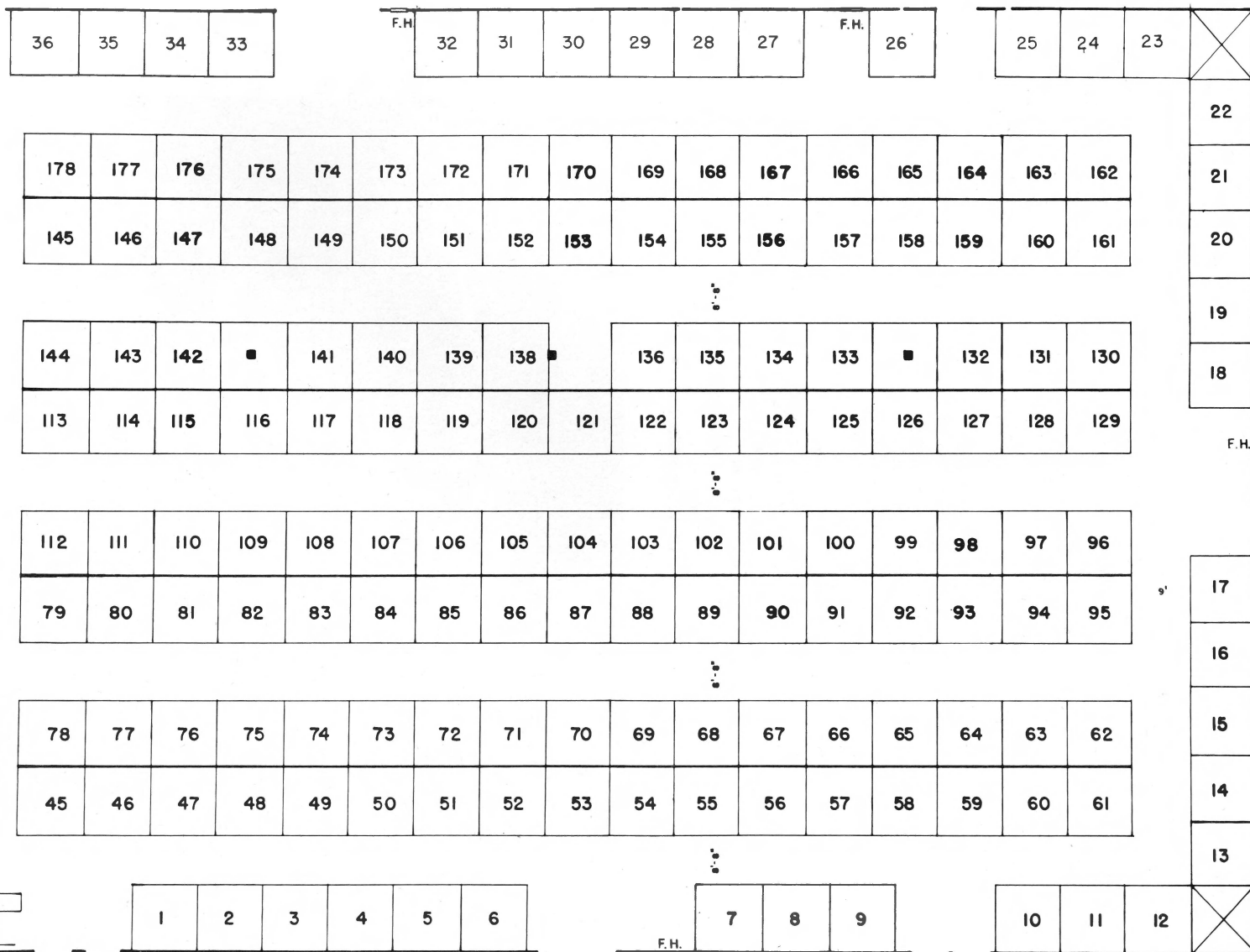
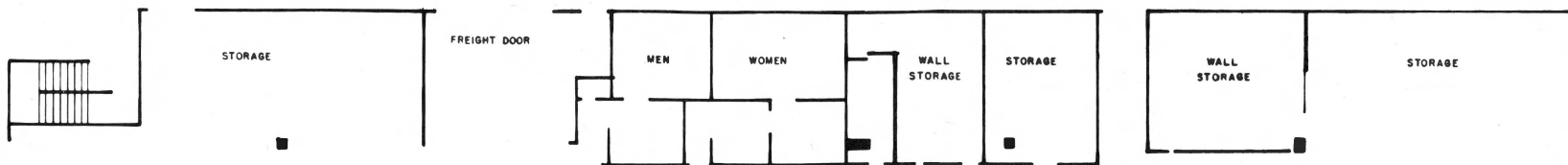
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DELPA SYSTEMS UK LTD.	4003
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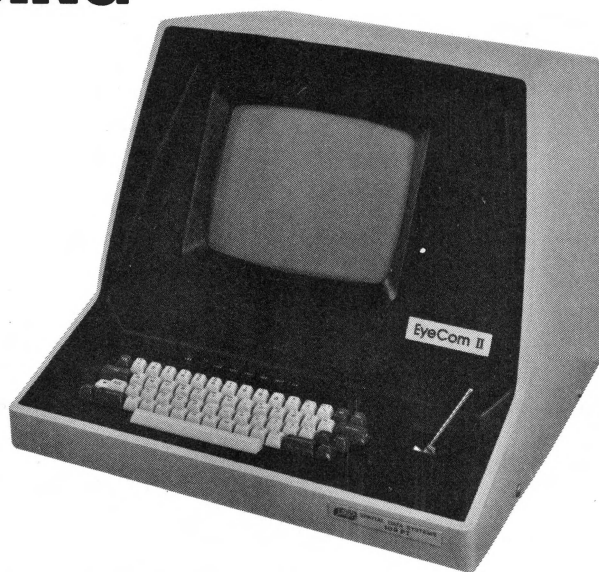
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AM JACQUARD SYSTEMS	2103
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JAPAN MARKET CONSULTANTS, DIV. OF ENGINEERS INT'L, INC.	1768, 1770, 1771
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LYNWOOD SCIENTIFIC DEVELOPMENTS LTD.	4102
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MEMOREX CORPORATION	67
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MINI-COMPUTER SYSTEMS, INC.	2602, 2604, 2606, 2608, 2610
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RACAL-MILGO, INC.	2418
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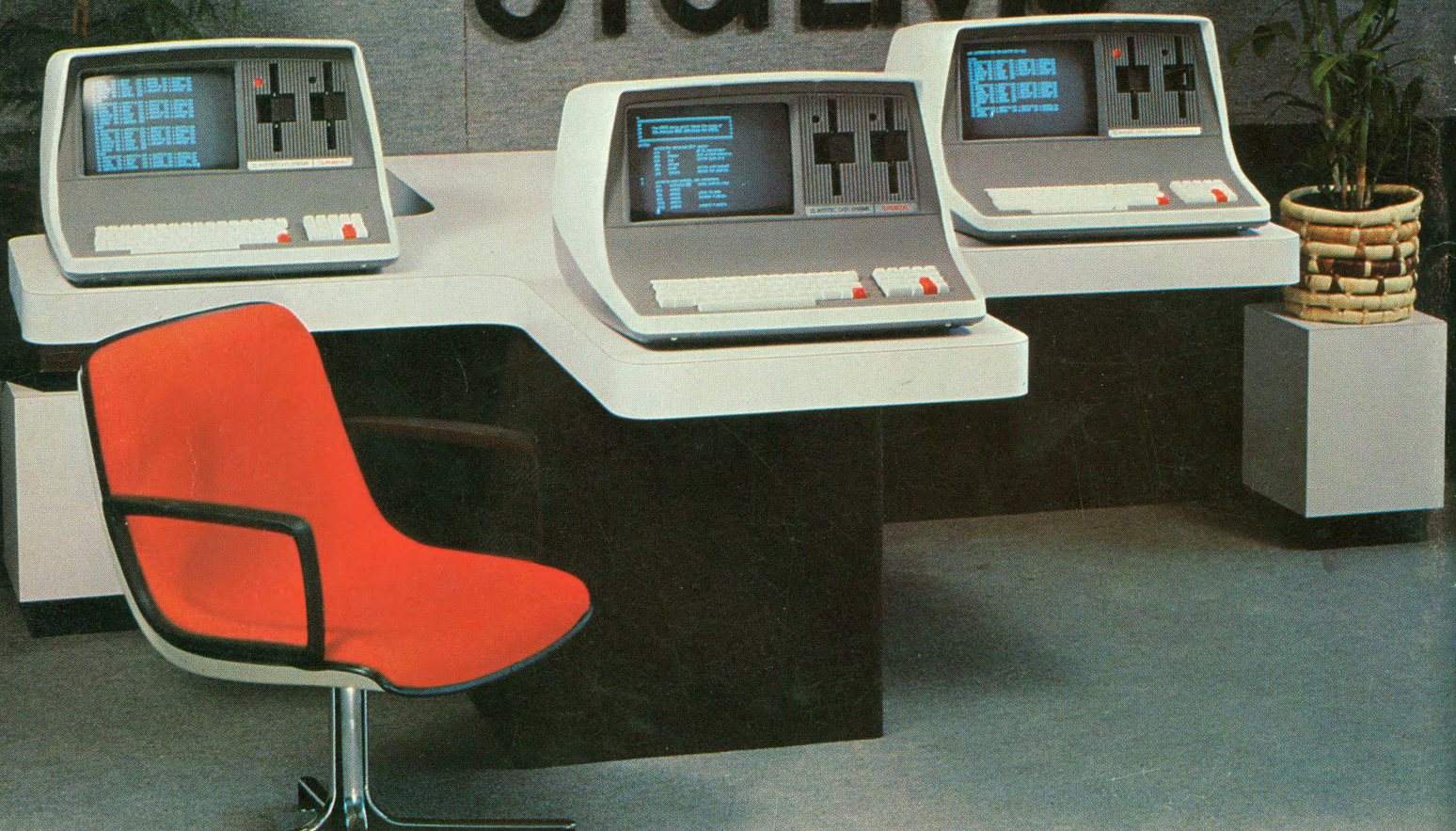
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